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# USSR Report

## ECONOMIC AFFAIRS

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18 July 1985

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ECONOMIC AFFAIRS**

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ECONOMIC POLICY, ORGANIZATION AND MANAGEMENT

CURRENT MANAGEMENT TECHNIQUES, PROPOSED IMPROVEMENT EXAMINED

Moscow, EKONOMIKA I MATEMATICHESKIE METODY in Russian No 2, Mar-Apr 85 pp 211-223. Article submitted to editor on 30 Aug 84.

[Article by I. I. Lukinov: "The Problem of Improving Economic Management Techniques"]

[Text] Kiev -- The socialist economy is a dynamic system whose development is influenced by an aggregate of internal and external factors. A decisive impact on the system is exerted by social and scientific-technical progress; by changes in the productive forces and production relations; by the increasing division of labor and specialization coupled with the simultaneous trend toward cooperation and integration; and by the increased socialization of production. Continuous changes in social needs and effective demand, on the one hand, and in the volume, structure and quality of society's resource and production potential (including modes of effective substitution of one resource for another) on the other, in turn require the formation of more flexible economic systems ensuring the economic stability, timeliness and completeness of satisfaction of the customer's changing needs.

The mobility of needs and the possibility of meeting them -- these two basic components of the entire economy's balance -- under the conditions of a national economy regulated according to plan generate the objective need to find and introduce more effective and efficient methods of economic management and to secure their rational combination with administrative methods.

Experience has shown that attempts to resolve complex economic problems by administrative methods alone are usually relatively ineffective and are sometimes even harmful since they may lead to unproductive expenditures of social labor. Economic plans, decrees, orders, and instructions that are not backed by the proper economic, organizational and oversight actions, by precise calculations of the required material and financial resources, appropriate sources, and recoupment deadlines frequently remain unfulfilled and do not exert a sufficiently effective influence on the real course of economic development. Excess unwieldiness of management in turn slows down the making and implementation of economic decisions.

The proper distribution of functions in the complex hierarchy of management is of special importance. The striving of "upper links" to supplant the work of "lower links" under the flag of "tangible leadership" only gives the external appearance of managerial activity. In actuality, this diverts efforts from the resolution of more complex and difficult questions of the "upper echelon" and moreover reduces the responsibility of the direct executors and hampers their initiative.

The strengthening of the economic methods of management is intended to eliminate these shortcomings and the frequent collisions that arise when economic decisions are made by some organs while the responsibility for their execution is placed on others. The precise functioning of (even the most sophisticated) economic mechanism is inconceivable without bringing order to the structure of management, including the revision of functions of its levels, the elimination of unwieldiness and unnecessary duplication, and the establishment of strict economic and legal responsibility of every link for the implementation of adopted measures.

The resolution of urgent problems relating to the further acceleration of growth rates and the elimination of the negative trend toward higher production costs and imbalance require the structural reorientation of the economy, its conversion to the rails of intensive development, and the qualitatively new reconstruction and modernization of the national economy based on advances of modern scientific and technology. Therein lies the essence of the economic policy of the CPSU and the Soviet state. The realization of this strategy, reinforced by decisions of party congresses, is based on the development of Marxist-Leninist doctrine, on the elaboration of scientific concepts conforming to the existing level of progress and the demands for highly effective management in a rapidly changing situation. Comprehensive analysis of preceding development and its next frontiers reveals both positive and negative economic trends and provides a reliable key to the search for effective measures for expanding the former and eliminating the latter, to developing a more sophisticated economic mechanism for a progressive economic system.

#### The Economic Mechanism in the Manifestation of Economic Relations and Interests

The economic mechanism (in the narrow sense of the word) is the aggregate of such closely interconnected economic methods of management as planning; price and financial-credit regulation; the establishment and distribution of accumulation and consumption funds; structural and investment policy; cost accounting incentives, etc., and expresses the substantive aspect of socialist production relations and the complex hierarchy of economic interests. The entire system of state planned management, including pricing, the formation and utilization of financial, credit and material-technical resources in the decisive directions, expresses the main and determinant social and economic interest of all the people to which the interests of all lower links of the national economy are subordinated. One of the principal tasks of the economic mechanism is to select from the multitude of possible variants the optimal combination of economic interests (especially, the combination of

public, collective, and personal interests) that is possible for the given stage. The economic interest of all the people under socialism is guaranteed by state policy, by direct moral and material (cost accounting) interest, and by the economic interest and economic responsibility of each labor collective, of every worker. As we know, the human factor in any economic system is the only driving force that brings the aggregate production potential into action and that forms the end result.

Real socialism for the first time in history aroused the broad masses, directed their energy and enthusiasm into great creative activity and into the creative management of the social economy, and gave everyone equal access to public resources, to material and nonmaterial assets. However since the inculcation of communist consciousness is a prolonged process and survivals of the past and the desire of some members of society to get more and work less are still tenacious, the socialist state exercises oversight over the measure of labor and the measure of consumption and makes broad use of the cost accounting stimulation of labor and production.

Given the present very powerful economic potential, the national wealth of the USSR in 1983 was valued at 3.2 trillion rubles not counting land, timber, minerals, and water resources [1, p 47]. Scientific forecasting and precise planned calculation of future optimal needs and their structure and the resource potential for satisfying these needs acquire special significance for effective management that excludes both scarcity and the production of things the consumer does not need. The fight against the extravagant use of resources and for their reproduction on an expanding scale bears appreciable fruit where the sense of socialist stewardship is highly developed, where capital is rapidly renovated, where new resource-conserving technologies are introduced, where the economic model is oriented toward the minimization of aggregate costs per unit of popular, high-quality output.

Production must function under stable economic conditions of cost accounting activity that does not permit voluntarism, unsubstantiated budget withholdings and gratuitous receipts and that promote the growing contribution of every sphere to national income and to the state budget. At the same time, it is essential to defray production costs completely and to obtain net income (profit) in a sufficient amount to settle accounts with the budget fully and on schedule, to form internal incentive and development funds in accordance with planned growth rates and improvements in production. Temporary shortages of financial resources for these purposes can be compensated by credit sources. This is specifically the essence of the able planned management of costs and incomes and of the price and financial-credit mechanism.

The role of economic effectiveness indicators cannot be reduced to merely recording these indicators in annual and quarterly reports when it is too late to correct matters. They must be consciously and purposefully formed continuously. The movement of aggregate costs (one-time and current costs) and social value under the influence of opposing (cost-increasing and cost-reducing) factors predetermines change of the entire price and currency-finance system in one or another direction from the point of departure. Therefore it is not legitimate to regard the economic mechanism as a kind of "surface phenomenon" of so-called "deep-seated relations" that go beyond the

framework of political economy. The objective economic laws of socialism are specifically realized in the action of the economic mechanism, in conscious economic management.

Irrespective of its size, every socialist enterprise, just like a larger unit -- an economic association or a complex at one or another level, all the way up to the unified national economic complex -- possesses the characteristic property of a system that functions on the basis of the circulation of flows of physical assets and money.

From an economic point of view, the necessary production components (raw materials, supplies, components, fuel, electric power, etc.) are acquired through the "input channel" of the economic system. The enterprise here acts in the capacity of customer. Nor is the situation here altered by the fact that suppliers are established according to plan and contractual commitments and that purchases are based on firmly fixed state prices. The volume and structure of deliveries and the level of prices on production components predetermine the size of the customer's material costs and the supplier's income. The final product of the production process also includes transferred newly created value. Depending on the degree of technical, technological and organizational perfection of a certain type of production, individual value may be lower, higher, or equal to social value. The latter, as we know, is the basis of planned pricing even though planned prices, being relatively stable, deviate from more flexible social value.

With the production of the final product, the enterprise also simultaneously becomes a supplier that sells the product for firm wholesale prices in accordance with orders and the plan for supplying products to customers. Comparison of expenditures and results characterizes cost accounting effectiveness and economic profitability. The regulation of profitability by the labor collective is limited by the degree of maneuverability of production costs and in particular the possibility of reducing costs through the replacement of resources, through their conservation in the production process, and through the exclusion of losses. This is achieved primarily through improvements in organization and management, the introduction of resource-conserving technologies, the production of higher quality products with correspondingly higher wholesale prices, and higher output in response to growing demand. Strictly speaking, this is also the source of decisive resources for increasing the economic effectiveness of socialist enterprises. The correlation between production costs and wholesale prices, between total costs and earnings differs greatly even among enterprises in the same category depending on the degree of technological and organizational perfection of production, the ability to manage a large economy rationally, and natural working conditions in the extractive industry and agriculture.

If the planning system is properly organized and the pricing and financial and credit mechanism is doing a good job of performing stimulating functions, that is, if the established prices motivate labor collectives to produce more, less expensively and better and to update the product mix continuously in keeping with the dynamics and structure of needs, then the entire system of management will function smoothly. In order to secure stable economic conditions for managing social production on the basis of cost accounting

principles, in the area of price planning the sale price must exceed the economically substantiated norm governing the production costs of normally operating enterprises by the amount of profits that guarantee the growth of budget accumulations and enterprise funds in accordance with the realization of plan targets. In our view, the price model that corresponds to the planned rate of expanded reproduction is the most faithful and must become the scientific basis of planned pricing and ongoing price regulation. It is also very important that norms governing budget withholdings and the formation of cost accounting development and incentive funds be stable.

The production activity of groups of enterprises and associations which, as a result of these and other factors, have an insufficient profit margin under existing wholesale prices, i. e., that are near or below the breakeven point or that sustain losses from one year to the next, should be scrutinized with particular care. This requires the development of effective measures to overcome this phenomenon which is abnormal for a socialist economy: the strengthening of leadership and the entire production organization system; its radical technological reconstruction and modernization; its reorientation toward the production of new products; and the revision of the level of wholesale prices (if they are artificially low). It is also possible to adopt integrated measures that embrace all or some of these directions. At the same time, where economically feasible, it is also necessary to incorporate measures of this type more widely in highly effective economic associations and complexes that are capable of overcoming lag in a shorter time.

The struggle against low profitability and unprofitability occupies a leading place in the effort to improve the economic mechanism. "Equalization" through the excessive withholding of so-called "profit remainders" from high-income enterprises with the subsequent defrayment of the losses of enterprises operating near or below the breakeven point and nonreturnable allocations to these enterprises is fraught with two-sided negative consequences. On the one hand, the labor collectives of highly effective associations and enterprises lose their economic motivation for higher profits because they know that the increase in profits in one form or another may be taken away. On the other hand, the collectives of lagging enterprises get used to the idea that the state will cover their losses.

Such a situation causes collective and personal interests to clash with public interests.

Understandably, leading enterprises which possess a higher production potential -- state-of-the-art equipment and technologies developed with the aid of state allocations -- should make higher payments to the budget (as is the case in practice) than average and lagging enterprises with inferior conditions for increasing labor productivity and profits. But at the same time that labor collectives contribute more to the budget, they should continue to be given a progressive incentive to increase the effectiveness [of production] and to modernize technology. It is absolutely inadmissible to maintain unprofitable enterprises on the basis of constant "handouts."

The state addresses problems of paramount national importance by concentrating investments and resources in the principal directions of economic development.

This includes the implementation of such large-scale national economic programs as the Energy Program and the Food Program, the strengthening of the nation's defensive capability, the mastery of natural resources in remote regions of the Northeast and the East, the exploration of the World Ocean and outer space, the development of the infrastructure (especially large transport systems integrating land, air, sea, and river transport), the development of new types of production, etc. All this is associated with the objectively necessary formation and effective utilization of centralized accumulation funds. Here, too, the socialist economic system has indisputable advantages. At the same time, enterprise leaders and labor collectives themselves are called upon to compensate current costs and to build up resources for expanding and improving the quality of ongoing production. They must bear full economic and legal responsibility for the final results of their work, that is, for the fulfillment of plans and orders for goods of the proper mix and quality on schedule and for realizing a profit at a level no lower than the norm that is predetermined by the wholesale price structure. The implementation of all centralized state program measures must also be based on the maximum conservation of national resources.

The striving of production associations and enterprises and the service sphere to have the largest possible volume of gross and net income thereby ensuring increased budget revenues as well as higher internal development and incentive funds is entirely understandable. But this striving is justified only when it has a healthy economic base, i. e., when the goal is based on an increase in the volume of commodity output, improvements in quality, the renovation of the product mix, and lower production costs coupled with stable or declining sale prices. But if "activity" is manifested in the easier direction of artificially inflated prices, in more expensive products, this will lead to the reduced effectiveness of social production.

#### Criteria and Indicators for Evaluating Effectiveness in the Planned Regulation of Cost Accounting Activity

The economic system functions normally, i. e., operates rhythmically and systematically under conditions that ensure the strict balance of physical and monetary flows as "inputs" and "outputs" when capacities are utilized rationally and labor resources are used effectively. In other words, everything that is acquired is fully processed to form new products that enter consumption; above-norm inventories and the immobilization of resources are excluded. The only effective type of economic activity is the one that meets the degree of return demanded by the national economy on aggregate costs, on fixed and working capital, and on all exploited resources.

From our point of view, in addition to using the return on expenditures and capital as indicators for evaluating cost accounting effectiveness, we should also use such indicators as the ratio of net income (profit)  $p$  to production cost ( $p/(c + v)$ ), to fixed  $F'$  and working  $F''$  capital ( $p/(F' + F'')$ ), and introduce an analogous indicator for the aggregate resource potential XXXX which, in addition to productive capital and manpower, also includes exploited natural resources (land, water, mineral, timber resources). At the same time that we draw them into active economic circulation, we must also have the appropriate accumulations for their reproduction (on an expanded scale)

because the need for these resources is growing. A particularly complex situation is presented by those types of resources that cannot be reproduced in the usual way. Their depletion inevitably leads to higher costs on the one hand and to increased spending on the search for new sources or on the replacement of these resources by other, more readily available, reliable, and cheaper resources on the other. All this requires the development of the theory of socialist expanded reproduction from the standpoint of the most effective utilization of the aggregate resource potential.

Criteria for evaluating the degree of rationality of the work of enterprises and associations play no small part in the economic mechanism because they are directly associated with the formation and use of cost accounting funds, with material and moral incentives, and with social prestige. For many years, our economic literature criticized the "gross" indicator which gave way to evaluations based on commodity output and, later on, to evaluations based on so-called normative net output. Change in the evaluation indicator in itself will hardly improve the entire economic mechanism. The point is that each of the indicated evaluations and many other economic evaluations characterize one or another aspect of the results of production activity. In this area, we must not allow any one indicator to be fetishized. The degree of utilization of the aggregate resource potential and the striving to minimize the expenditure of resources per unit of final output for the satisfaction of social needs must be a general indicator and the most important of these indicators.

Even if the reduction of the "gross" is concurrent with an increase in the quantity required products, with improvements in their quality, and with the lowering of their cost as a result of structural changes, the elimination of expensive materials, the reduction of the weight of the product, and the lowering of expenditures of socially necessary labor per unit of output, nonetheless there will be a real increase in effectiveness at the national economic and at lower levels. Final effectiveness can be calculated more precisely in the concluding stage of the reproductive cycle -- the stage in which goods are sold or services are performed directly for the customer. As experience shows, the wholesale sale of the output of industrial associations and enterprises by the latter to supply-sales or trade organizations still does not by any means indicate that the customer's demand is satisfied. They reject some of the output for various reasons.

The orientation toward the customer, toward the satisfaction of his demands is one of the decisive criteria of national effectiveness that stems from the basic economic law of socialism. Current large-scale economic experiments are aimed at the resolution of this principal task. There is a need for planned guarantees against negative manifestations -- scarcity and the production of goods that are not in demand. These two problems cannot be examined in isolation from one another. Emphasis on the elimination of scarcity exclusively through the increase of new capacities without the restructuring of production in depth and the elimination of the expenditure of resources on the production of unwanted goods and services is no guarantee against losses. Miscalculations in planning, the failure to take real demand into account, the lack of proper flexibility in the management of production and demand, and the lack of their timely reorientation toward a number of products give rise to a

so-called "glut" -- to the buildup of above-norm inventories in the warehouses of manufacturing enterprises as well as in the wholesale and retail trade network.

The glut stems not only from the production of low quality products, but also from seasonal disparities, the failure to take fashion into account, the excess of production over actual requirements, and the insufficient flexibility of state retail prices. We can cite the following example. Natural fruit juices are a very useful food for people of all ages throughout the entire year. Retail prices on fruit juices were set at a higher level at a time when they were in short supply. But the situation changed dramatically in recent years. The production of juices has expanded sharply, real prerequisites have developed for reducing their cost, but the conditions of trade have remained practically the same. Juice prices continue to be high. Juices are for the most part sold in large, three-liter containers without being properly advertised and marketed (refrigeration, selection of the most promising markets, the use of juices in various types of cocktails, etc.). The result is a glut and on quite a large scale.

Most of our sewn goods are made from materials that are equal or superior to the quality of imported materials. However, they frequently prove to be uncompetitive in the domestic marketplace as a result of their style, color, and accessories. As a result, despite the fact that a considerable volume of goods are produced, demand is not entirely satisfied and artificial shortages develop as a result. Certain durable goods, the design of which is not updated and improved as soon as it should be, frequently become a glut in stores (for example, certain brands of refrigerators, washing machines, television sets, radios, etc.) thereby resulting in slower turnover and in lower state revenues.

The production of obsolete or low-quality equipment and machinery by machine builders for the technological renovation of production restricts the rate of scientific and technical progress. The rate and scale of technical and technological renovation are directly determined by machine building branches and by the quality and level of cost of manufactured systems of machines. When designing new and rebuilding existing production facilities, the transition should be made from series-produced equipment to orders for equipment based on the latest advances in science and technology, to the development of flexible systems (in modular form) that can be quickly adapted to conform to the requisite product mix.

There is no need to plan the further expansion of the production of goods for which demand is already saturated. While maintaining a stable level of production, primary emphasis should be placed on structural and qualitative improvements in products and on reducing their cost, thereby expanding the market for them. At the same time that we address the problem of expanding and rebuilding capacities for increasing the production of scarce products, we must also influence consumer demand by regulating state prices without allowing the development of situations that permit unscrupulous people to profiteer and otherwise exploit scarcity to selfish ends. In order to prevent the dissipation of state revenues and to ensure the economical expenditure of limited commodity resources, the level of retail prices on these resources

should be thoroughly substantiated in economic terms in accordance with the movement of wholesale and purchase prices and the quality of goods.

In some cases, the trend toward higher production costs resulting from the action of such objective factors as, for example, the depletion of mineral reserves and the deterioration of mining-geological conditions of extraction in old basins, the working of new fuel and raw material deposits in regions distant from the point of consumption, the agricultural cultivation of marginal land, the influence of adverse weather conditions, etc., necessitates higher wholesale (purchase) prices. The result is higher cost to customers, including customers that are producers of the final product, unless it is possible to curb increases in cost as a result, for example, of resource-conserving technologies in all stages of reproduction.

Price increases and price reductions due to changes in the objective conditions of management are objectively justified.

With improvements in the economic mechanism, planned prices must be assigned artificially underpriced or overpriced goods and services in keeping with their objective basis -- social value that takes the level of consumer properties of products into account. Obviously, the time has come to improve

the ways and means of state control of pricing and to bring them more closely into line with the real process of planned reproduction and circulation.

As analysis of discounts of unsalable products shows, the proceeds from discount sales of many items not only do not compensate their actual value but do not even compensate production and marketing outlays, and that in extreme cases some products are written off as total losses. However, these losses can be cut by reducing retail prices in good time. Planned pricing principles are not only not weakened as a result, but to the contrary acquire an economically more substantiated character. From the state's standpoint, it is very wasteful to produce goods that are not in demand. The expended labor, raw materials, supplies, and energy are irretrievably lost while the market is expanded in the amount of the wages that are paid for the production of these products. The latter takes place in the event of the delivery of equipment that is not installed and put into operation on schedule and also when the volume of construction in progress is increased and when standard deadlines for activating capacities are not met. Instances in which the growth rates of wages surpass the growth rates of labor productivity are still not isolated occurrences. The result is an imbalance between increased consumer demand as a result of the indicated factors and the actual increase in the requisite goods and services.

Consequently, there is a need for a comprehensive, many-sided approach to the elimination of these negative phenomena that contradict genuinely scientific principles in the management of a planned economy. We must first of all continue to implement the party's policy of strengthening labor discipline and organization in every way, eliminating elements of mismanagement, extravagance and undefined responsibility [obezlichka], and preventing the waste of state and economic revenues in every way. The strict observance of the Leninist principles of socialist cost accounting, economic motivation and

responsibility is the decisive prerequisite to effective operation and to the inculcation of the working people in the spirit of thrift. We must every make the transition from formal cost accounting to real cost accounting, to the strict comparison and oversight of expenditures and results in all production and marketing links and at all levels of economic management. The development of the brigade contract on a cost accounting basis is a most important step in this direction.

Labor collectives are becoming entities that bear full responsibility to society for the level of utilization and return on national resources and for the final effectiveness of production. The Law on Labor Collectives adopted at the June 1983 Session of the USSR Supreme Soviet substantially expands their rights in management and in cost accounting activity. The economic experiments conducted in the associations and enterprises of a number of ministries and departments also shift the center of gravity to labor collectives that are more and more widely drawn into the system of direct economic management. The experiments focus on securing the more substantiated planning, stimulation and rational use of resources and the wage fund with a smaller work force and a higher share of skilled labor, with the improved organization of labor of brigades, the technological re-equipment of production, the precise fulfillment of orders with respect to mix, etc. There is increased responsibility for and interest in performance indicators.

Democratic centralism is by its social nature based on the involvement of all working people in the socialist management process which in the future will inevitably develop into communist self-government. Every worker, as the co-owner of national property, has the duty of protecting and multiplying it, and of actively struggling for the highly effective management of the social economy.

Indicators for evaluating the performance of socialist management must grow on the basis of the development and improvement of production to satisfy social and personal requirements at a lowering social cost per unit of useful effect of the product. The socialist state has outlawed the possibility of increasing the profits of socialist enterprises and hence of increasing cost accounting incentive funds through any kind of "profitable" deals, overpricing, by substituting expensive products for inexpensive products, etc. Planned orders in the specified mix must be filled without fail. The occasional circumvention of these principles is strictly condemned and the guilty are punished. The socialist principle of distribution according to one's labor is a powerful economic incentive for increased labor productivity that opposes negative manifestations of undefined responsibility and irresponsibility.

#### Perspectives for Improving the Economic Mechanism

The realization of the strategic goals of communist construction in the last part of the 20th century is associated with the further intensification of the driving forces behind the acceleration of scientific-technical progress and the rates of development of the national economy, with the strengthening of the economic and defensive might of the state, and with the rising living standard of the Soviet people. The conversion of the economy to the path of

intensification makes corresponding demands on the socialist management mechanism which must be sensitive in its reaction to changes in production and marketing conditions. At the same time, with the change in the situation, there also inevitably arise alternate variants of economic solutions, from which it is important to choose the optimum variant based on the criterion of effectiveness.

Long-term forecasting and planning of needs, on the one hand, and the corresponding reorientation of the resource potential, on the other, must be based on the state's structural, price and investment policy. Given the present rate, scale and structure of social production, balance must be determined not only by the substantiated establishment of the correlation between the two departments of social production (including industry groups A and B), but also by the optimization of their internal structures on the basis of detailed balances of movement of needs and their actual satisfaction both in quantity and quality as well as in physical and value form.

The acceleration of economic growth rates requires the relatively more rapid development and qualitative transformation of the branches and spheres that predetermine the rapid reconstruction and modernization of social production on the basis of the latest advances in science and technology. The transition from the production of individual, unintegrated machinery and implements and automated systems to the production of complexes (systems) of modular machinery with the wide use of robotics, the automated control of production processes (including organization and technology) with a minimal work force is the basis of acceleration of real progress. This is a fundamentally new stage in the qualitative transformation of the entire material-technical base of mature socialism, in the development of its productive forces and corresponding changes in production relations. This is also the source of the ever more vivid manifestation of two directly opposite economic trends: further specialization and the simultaneous formation of economically powerful integrated economic systems capable of flexible reaction to new conditions. The result is the deepening of production socialization processes.

The dimensions of an enterprise or production facility today are determined not by the size of its work force and capital, but primarily by its performance which depends on the degree of intensiveness of production, its resource-conserving potential. Automated shops and enterprises can with a minimal work force achieve maximum performance in quantity, quality and production cost. The size of elements in the economic system must be optimized for each stage of development without permitting economically unjustified "gigantomania" as well as the existence of unjustifiably small enterprises with backward technology. The most important thing is that all enterprises work effectively and rhythmically in the unified national economic complex and that they satisfy the necessary needs. In the reconstruction process, each of them is called upon to update the mix, to improve product quality, and to reduce production cost. At the same time that obsolete and low quality products are taken out of production, it is essential to produce products that are competitive in the world market. There are numerous vivid examples of the development of new production facilities and highly effective modernization of facilities existing not only in such "flagships" of progress as, for example, power engineering, radioelectronics and certain other spheres

of industry, but also in age-old agrarian branches that would seem to be far removed from industry -- poultry farming, for example. As a result of its radical transformation along the lines of fundamentally new industrial technology, its per capita and per worker potential and capital-worker ratio have increased tenfolds. In the process, market demand for products sold for firm, quite low state retail prices has been saturated while the production cost of eggs and broilers at poultry factories has not tended to rise and has even declined in many cases, thereby raising the level of economic profitability.

The following typical example can be cited. The replacement of the KM-87D mining complex by the new, more productive KM-88 complex (designed to mine thin seams) at the Ukraina Mine in the "Selidovugol" Production Association in 1982 raised the output-capital ratio by 9 percent and labor productivity by 12 percent. When the complex was operated at full capacity in 1983, the volume of coal production rose by 13 percent and the labor productivity of miners rose by 14 percent.

Such examples confirm the truth that the rational renovation of capital in line with more sophisticated technology, its full utilization and continuous operation are not by any means accompanied by a decline in the output-capital ratio and higher production costs, but to the contrary, raise economic effectiveness. It is also important that the production cycle is shortened.

Between 60 and 70 percent of the production cycle at many machine building enterprises is taken up with periods of so-called "idle time" of workpieces, assemblies and blanks and with interruptions in the manufacturing process which are the result of organizational and technological shortcomings that must be decisively eliminated on the process of technical renovation. Of course, in those industrial associations and at enterprises and even in branches of industry where the activation of new productive capital, especially its active part, has for a long time has substantially surpassed the retirement of old capital that is written off only on the basis of dilapidation or natural disaster, no serious increase in effect can be expected.

In itself, the regular growth of capacities without radical technological and organizational restructuring is an extensive process requiring new jobs which in view of the scarcity of labor resources may entail the lowering of the shift coefficient of equipment operation and as a result a rise in the capital-output ratio (a decline in the output-capital ratio). At the same time, capital deteriorates physically, to say nothing of its becoming obsolescent. It is also necessary to augment the capacity of repair facilities and to establish new jobs at the same time that even now in a number of branches the aggregate cost of repair is higher than the cost of a new item and this does not tend to accelerate the intensification process.

We must establish more precise deadlines for capital renovation and adhere to them strictly. We must simplify the capital retirement procedure and give broader powers to managers and labor collectives of associations and enterprises in this regard. An optimal long-range program for the replacement, modernization, repair and acquisition of new equipment must be

developed for the conditions of each of them. In our view, with the relatively more rapid increase in the production of new machine systems, the capital repair base and amortization funds in the future must be gradually converted from the reconditioning of old equipment to the modernization and renovation and renovation of fixed capital in existing production.

We must increase the degree of balance between jobs and the manpower available to fill them. In the process of examining and coordinating design documentation on new and rebuilt facilities, attention is primarily focused on volume indicators rather than production effectiveness indicators. Statistical data reflect only the conditional release of personnel. The absolute release indicator, i. e., the reduction in the number of jobs, must be included in plans and reports. Soviets of People's Deputies should evidently be empowered to invoke economic sanctions against enterprises that violate manpower ceilings irrespective of the degree of priority of the given production facility.

From our point of view, in order to generate more reliable economic prerequisites and stimuli for increasing the effectiveness of management, the following measures should be taken to improve the economic mechanism:

-- production and consumption should be balanced more flexibly at the macro- and microeconomic levels in the state planning system; target program methods should be used more actively in the development and implementation of a strictly substantiated number of measures of national importance associated with actual economic potential;

-- it should be made the practice to establish planned rates of technical and technological renovation of production applicable to the particular features of each branch and to observe deadlines to the letter and to grant broad powers and authority to the leaders and labor collectives of associations and enterprises in this area; the cost accounting interest and responsibility of all elements in the system -- from the inception of the scientific idea to its technical materialization and mass assimilation in production -- for the reduction of time, for high quality and for the effectiveness of innovations should be raised. These measures must as a rule be based on contractual orders;

-- centralized planned management, including price and financial-credit regulation, must be more effectively oriented toward the establishment of stable economic conditions, toward the strengthening of the state's entire currency system in order to secure the real cost accounting activity of branches, associations and enterprises and the strictest control by the ruble over their performance;

-- the fulfillment of plans and contractual commitments to customers with regard to mix, quality and established price on schedule should be regarded as the principal criterion for evaluating the performance of associations and enterprises. The final settlement of accounts with producers should take place following the final sale of the products. Losses resulting from the

violation of economic contracts should be defrayed entirely from the cost accounting funds of the violators;

-- manifestations of egalitarian distribution should be thoroughly eliminated at all levels of the management hierarchy;

-- price and finance-credit regulation should be closely coordinated and the use of financial levers should not be permitted in cases when the price mechanism can have a stronger stimulating impact on the growth of effectiveness. Economically unwarranted budget subsidies that lower the role of cost accounting principles and that frequently generate parasitical tendencies should be reduced by simultaneously revising wholesale, purchase and retail prices and rates of payment for services;

-- economically unwarranted transfusions of income in favor of various branches, production facilities, and departments should not be permitted when goods and services are exchanged between allied spheres;

-- stricter planned control should be exercised over the movement of costs and prices designed to compensate expenditures and yield a profit for the planned rate of reproduction at a level no lower than 10-15 percent of aggregate production capital with the differentiation of this indicator for branches and groups of enterprises operating under objectively unequal conditions. The system of economic, organizational, scientific-technical, and technological measures must be used to raise enterprises and production facilities near or below the breakeven point to the planned cost accounting profitability norm that eliminates the need for subsidies. In some cases, it is also possible to reach to the decision to shut down unprofitable production facilities after first taking steps to shift their production volume to profitable facilities and to find jobs for the personnel of enterprises that are closed down;

-- the role of credit should be strengthened in stimulating the acceleration of the rate of recoupment of investment and in raising the profitability level of lagging enterprises to the level of the normative indicator. In view of the new circumstances, interest rates should be redefined to enhance their stimulating role in speeding up capital investment turnover time;

-- stable normative budgetary deductions should be established for the five-year plan period in order to satisfy national needs and to exclude the unsubstantiated intervention of the upper links in the formation and use of cost accounting funds, inter alia, for the reconstruction and modernization of production; appropriate material-technical aid must be provided on a top priority basis;

-- the initiative and socialist enterprise of managers and labor collectives must be developed and supported in every way in: the fulfillment of state plans; the identification of internal reserves; the incorporation of reserves in plan targets and securing their realization; and the more complete and effective use of local resources for the production of commodities that are in high demand.

In our view, the future organization of management will be along the lines of the more rational aggregation of branch links, based on the objectively inevitable economic integration of associated spheres with due regard to experience already amassed in industry and agriculture. For example, the USSR Ministry of Ferrous Metallurgy, in addition to producing cast iron, steel and rolled metals also includes the mining and by-product coke industry, concentration mills, the production of refractories, and various service branches. One of the largest and most difficult to manage complexes is the agroindustrial complex which includes three large blocks of branches: (1) production of the means of production for agriculture, for transporting, storing and processing its raw materials (machine building, the chemical industry, the construction industry, the respective part of the power industry, etc.); (2) agriculture with its numerous farming and animal husbandry branches; and (3) branches engaged in the procurement, storage, and processing of raw materials and the sale of the final product to the customer.

Complex economic relations, internal and external ties, and the persisting influence of uncontrollable weather factors leave their mark on the entire system for managing the agroindustrial complex, and particularly complicate the system from the standpoint of the effective use of planned regulatory methods throughout the entire chain of allied spheres all the way up to the consumption of the final product.

In our view, it would be possible to secure the more rational distribution of functions between central, middle and lower (vertical) links and regional-branch (horizontal) links in management thereby strengthening, in addition to its central organs, its lower echelon organs with the simultaneous elimination of the duplication of the management effort.

The rate of economic development is influenced by changes in the world political situation, in economic and trade relations and in business conditions on the world market. The development of mutually advantageous economic integration and foreign trade relations between countries in the world socialist system strengthens their economic potential and creates favorable conditions for the acceleration of scientific-technical progress and the exchange of experience in socialist management. Equal economic and trade relations with capital countries ensure not only mutual economic gain but also the strengthening of mutual trust and general security. At the same time, the policy of atomic blackmail, intimidation and the arms race which is foisted on mankind by aggressive imperialist circles diverts the resource potential to the creation of arms systems in order to maintain the military strategic balance and the security of socialist attainments.

Thus, the problem of improving the economic mechanism encompasses multifaceted aspects of economic management. Among them, it is important at any given moment to find the decisive link that, in V. I. Lenin's apt words, can be used to pull the entire chain. We believe that this link today takes the form of the aggregate of economic levers that stimulate the acceleration of scientific-technical progress and the intensification of social production and that also secure real management of costs and results based on the criterion of satisfaction of final consumer demand. The minimization of the expenditure

of resources per unit of output in turn predetermines one of the most important aspects of national economic effectiveness and is successfully attained only under the conditions of effective cost accounting that stems from the very nature of developed socialism.

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## ECONOMIC POLICY, ORGANIZATION AND MANAGEMENT

### STRATEGY TO INCREASE PRODUCTION POTENTIAL CONSIDERED

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[Article by V. Lebedev, doctor of economic sciences; professor, Academy of Social Sciences under the CPSU Central Committee: "The Productive Forces of Socialism: The Content and Strategy of Effective Development"; passages rendered in all capital letters printed in boldface in source]

[Text] The development of socialism's productive forces is the basis of its transition to a new level of maturity. These forces directly affect nature and are the direct producers of vitally necessary material and nonmaterial goods, including implements of labor for all spheres of activity. The productive forces thereby ultimately determine the degree of growth of society's wealth and the degree of improvement of its economic relations.

In the present stage, the economy of developed socialism is revealing its advantages more and more fully. Compared with 1940, USSR national income has increased almost 16-fold and total productive fixed capital has grown 20-fold. The skill level of the working people has been raised dramatically. One-fourth of the world's scientists are at work in our country. The Soviet Union has approximately 6 percent of the world's population and accounts for more than 20 percent of the world's industrial output.

"We are confronted," Comrade M. S. Gorbachev notes, "by a task of great political importance -- the task of raising the national economy to a qualitatively new scientific-technical and organizational-economic level and of bringing about a decisive change in the intensification of social production and increasing its effectiveness."<sup>1</sup>

In connection with large-scale socioeconomic tasks, we must clearly understand the social productive forces and the strategy of securing their most effective development and use.

#### The Economic Content of the Productive Forces

The dialectic of the interrelationship between the two components of the mode of production -- the productive forces and economic relations -- is highly complex. Socialist economic relations basically correspond to the social

character of society's productive forces today and stimulate their successful functioning and development.

The structure of the productive forces defines the nature of reproduction and the specifics of functions in terms of their subjective and objective components, defines their composition as material and nonmaterial, and their effective time as potential and actual.

There have been major changes of late in the structure of the productive forces. Thus between 1940 and 1983, the share of blue-collar workers in the national economy's aggregate work force more than doubled between 1940 and 1983 (increased from 30.4 to 61.8 percent) while the share of productive fixed capital in industry approximately doubled (increased from 17 to 32.4 percent). The productive forces of the nonmaterial production sphere increased in number and strength (the share of the work force rose from 11.7 to 26.6 percent; nonproductive fixed capital increased more than tenfold and totaled 689 billion rubles).

The further development of the productive forces presupposes improvements in their structure. This objective necessity demands that economic science analyze in greater detail the structure of the productive forces with the aim of securing their qualitative transformation.

Natural, technical, production-related, and economic content can be identified in the structure of the productive forces. The first (which can be regarded as the physical, natural basis of these forces) is the object of natural science which reveals the laws of nature itself and the characteristics of natural substances used in production. The technical, production-related content (comprising the technological mode of production) includes the organization of the work force, as a direct participant in production processes, as well as the means of production. It is also the object of natural science, especially of technical, agronomic and similar sciences, but in their interrelationship with economic sciences.

The economic content of the productive forces is determined by social labor. The functional interaction of the aggregate work force and the means of production (i. e., the system of live and embodied labor) was identified by K. Marx as "social productive forces."<sup>2</sup> They in combination with social and economic relations form the social mode of production.

The working people play the leading role among the productive forces. They are united by cooperation in labor and are the agents of socioeconomic relations. Such functions as socioeconomic management of the production process and creativity are the exclusive property of man and his activity. Therefore, as V. I. Lenin wrote, the working people are society's first productive force. The effectiveness of the functioning of the main productive force is determined by the scale of cooperation in labor, the deep collectiveness of the working people and their creativity, and by the degree to which they master nature's potential. The advantages of the socialist cooperation of all the people in labor are enormous. They enabled our country to attain a postwar output volume roughly 3-4-fold greater than the technically developed capitalist countries.

Embodied labor also plays a large part in the economic structure of the social productive forces. "Embodied labor itself," K. Marx wrote, "directly participates in the system of machines not only in the form of a product or a product that is used as a means of labor, but also in the form of the most productive force."<sup>3</sup> Consequently, it is specifically aggregate labor that shows itself as the social productive force of the mode of production. Therefore we can understand K. Marx's conclusion that "both productive forces and social relations are different aspects of the development of the social individual...."<sup>4</sup>

In the literature, one encounters viewpoints, the authors of which, while not denying that social productive forces have their basis in labor, nonetheless do not consider them an economic category and declare them to be an element in the simple process of labor, a manifestation of specific labor, etc.

K. Marx viewed technology not only as functioning forces of nature, but also as the accumulation of embodied labor, as an aggregate of use values, as the coagulate of socioeconomic matter.<sup>5</sup> At the same time, he called the mode of reproduction an economic category and viewed it as a form of economic organization and dynamics.<sup>6</sup>

In the course of the formation and development of Marxist-Leninism economic doctrine and especially during the class struggle of the proletariat for power, it focused principal attention on the socioeconomic form of the productive forces, to the type of ownership of the means of production, in other words, to political economy as the science of the social form of labor. During this period, political economy displayed its special role: as the theoretical basis of the struggle of the working class -- the spokesman for the deepest economic interests of all working people for their liberation and as the means of theoretical and methodological understanding of the social essence of production and communist education. In the period of socialist construction, it also serves as the theoretical base of socioeconomic management of production. Therein lies the ideological function of political economy as the decisive nucleus of Marxist-Leninist doctrine.

The identification of the political economy nucleus of economics is one of the historic scientific accomplishments of the classical scholars of Marxism-Leninism. Therefore it is not by chance that our ideological opponents are attempting develop a technological political economy and to preserve the idea of the productive forces as the determining factor while sacrificing production relations.

At the same time, there is legitimacy to the broad view of economics that encompasses spheres of action, social productive forces, and socioeconomic relations.<sup>7</sup>

A precise understanding of the economic content of social productive forces is of substantial importance for improving planning and especially for improving the structure of capital investments, scientific-technical progress and the social development of society. In the planning and organization of

production, characteristics of social productive forces have long been considered economic and social indicators of state plans for development. It (the content) is specifically revealed in the following categories: labor resources; aggregate labor and its forms (specialization, cooperation, labor collectives at different levels); the labor force, its skill level; functions, organization, intensiveness, discipline, productivity, modification, and norming of labor; the system of use values of the means of production (branches, regions and individual types of means of labor: machinery, apparatus, instruments) as well as scientific knowledge and items of personal consumption. All these are essentially forms of manifestation of social labor. The economic content of the productive forces and the results of their functioning are naturally revealed by analysis of the effectiveness of production.

The unity of the economic content of all component parts of the productive forces consists in joint purposeful labor which is essentially the direct and indirect cooperation of the entire work force. Accordingly, there is every justification for calling this content socioeconomic content.

The close cooperation of all workers, which is objectively conditioned by the division of applied labor, expresses the social character of the productive forces. This quality of the productive forces comprises the objective material basis of the manifestation and development of social ownership of the means of production and the system of collectivist relations. And therefore, the underestimation of the close connection between the productive forces and socioeconomic relations is inadmissible. Such underestimation would mean the separation of the productive forces (as the essence of production) from the social form, basic goal and general conditions of reproduction. The CPSU and its Central Committee warns against such deviations. "...The correspondence of production relations to the productive forces," notes Comrade M. S. Gorbachev, "is not spontaneously reproduced, but requires a continuous purposeful effort to improve socialism's entire economic system. It is especially important to take this point into account during periods of profound qualitative change in the development of the national economy."<sup>8</sup>

The productive forces of socialism have certain specific features that form under the influence of socialist production relations. First, these forces are formed with an orientation toward the attainment of the steady growth of well-being and the comprehensive development of all members of society. Second, they comprise the national economic system (the unity of national cooperation in labor and the aggregate of machines). Third, their system (of cooperative labor) is characterized by the planned organization of development, by the general and increasingly direct participation of the working people in the management of the entire economic process. Fourth, socialism's productive forces are characterized by a high degree of structural, regional and branch homogeneity. For example, the difference in means of labor per worker and collective farmer is insignificant, while in the prewar period it (the capital-labor ratio) was roughly fivefold greater. The distinction between mental and physical labor, inter alia with regard to the share of creative functions, has changed substantially. The saturation of many regions with machines has grown. The concentration of labor processes has accelerated under the beneficial influence of collectivist relations. We

have established large collectives that systematically interact with one another.

Analytical data on the national economy's input-output table [mezhotraslevyy balans] are of interest in the qualitative characterization of the present level of socialization of the productive forces. Each of the 83 branches in the input-output table is linked to 50-80 others. At the same time, the labor expenditures are not more than 40 percent of the value of the product of the producing branch and in some branches -- 1-3 percent. Technological and economic integration of branches into the national economic complex has become a decisive factor in the socialization process.

Our country is in the initial stage of developed socialism, a fact that is reflected in the content of the productive forces and economic relations. There are still significant differences in the level of the scientific-technical capital per worker in industry and agriculture and in a number of other branches of the national economy. A considerable percent of the working people are engaged in manual labor. Some of the work at state enterprises, on collective farms, on personal household plots, and work in the home is not entirely of a directly social character. This is the reason for differences in income distribution.

The resolution of our society's economic and social problems in the present stage of its maturity is conditional and requires qualitative changes in the productive forces developing according to objective laws that are a separate area of research.

#### The Problem of Raising Socialism's Productive Forces to a Qualitatively New Level

The present level of development of the socialist economy, which is characterized as a unified national economic complex, opens up the possibility for the substantial acceleration of economic growth. The socioeconomic effectiveness of the functioning of the productive forces depends particularly on the measure of qualitative improvement of the organization of all production. Considerable reserves for increased effectiveness consist in the more complete exploitation of productive capital, in the reduction of norms of expenditure of all material and labor resources per unit of use value, and in improvements in capital construction. Thus, indicators of the effectiveness of production and labor at leading enterprises are usually 1.5-2 times higher than average. It is estimated that the optimal utilization of productive capital can roughly double production volume in a relatively short period of time without substantial additional outlays. Labor productivity is also raised to the same level.

However the indicated frontiers are close to the maximum possible boundaries to the economically feasible functioning of existing means of labor. It should be considered that the efficiency of most conventional machines is close to the theoretical limit and that their modernization requires substantial capital investments that are frequently recouped at a slower rate than expenditures on fundamentally new equipment.

The qualitative development of equipment and manpower on the basis of scientific advances contains significant and ever increasing reserves for the growth of economic effectiveness. The recoupment of capital investments in measures that draw upon the latest scientific advances is 1.5 years on the average; in general measures to develop new equipment -- 3 years, while 7-8 years are considered permissible throughout the entire reproductive process. Therefore, the decisions of the 26th Party Congress and subsequent plenums of the CPSU Central Committee, in addition to the task of improving the use of the accumulated potential, substantiate the policy of making the decisive transition to all-round intensification, to the introduction of the advances of the NTR [scientific and technological revolution], and to achieving world supremacy in labor productivity.

What should be the content of the qualitative transformation of the productive forces proper and in what way should it be achieved? The present process of development of society's productive forces is a highly complex process that encompasses all their structural components in all stages of reproduction. Now and in the eighties, especially under the 12th Five-Year Plan, it will to a greater degree be an experimental test and in some branches a practical test of a number of the most important advances of the NTR. In the nineties, this process will become the general and, in some branches, the final transition to fundamentally new technologies and to the qualitatively new organization of production.

In connection with the differences in scientific potential, in our view we should differentiate between intensification based on evolutionary and revolutionary scientific advances. The former make it possible only to improve existing processes and forms of labor organization. The latter open up the possibility for making the transition to productive forces at a new level and to a fundamentally new socioeconomic result. Intensification should also be considered accordingly.

"The main path to qualitative change in the productive forces is, of course, the transition to intensive development and the coupling of the advantages of our socialist system to the attainments of the scientific and technological revolution. Moreover, to its very last stage which promises technological change in many spheres of production."<sup>9</sup>

The revolutionary form of intensification is characterized by the acceleration of scientific and technical progress, by its integrated and dynamic character. Its development is uneven and demands new organization. This path is noteworthy for deep structural changes in the national economy and by the substantial acceleration of the growth of its economic and social effectiveness.

In our view, the substantial development of man as the leading productive force first and foremost as a result of the qualitative improvement of his occupational mastery, creativity, and participation in the management of the economy, i. e., forms corresponding to the task of improving developed socialism.

The improvement in qualifications in the new stage should be organized primarily in collective (especially, brigade) forms focusing on the fastest and most effective ways of accelerating scientific-technical progress, on the introduction of the highest accomplishments of science, technology and progressive know-how. In the future, the content of the skill level of all working people will become the ability to master the attainments of the scientific and technological revolution. In this regard, it is useful to develop state long-term programs for raising the quality of the skill levels of all working people appropriate to the stages of development of the NTR and with due regard to the specifics of their functions in production. In the process, it is also necessary to "actively FORM A NEW TYPE OF ECONOMIC THOUGHT that is oriented toward initiative and socialist enterprise, toward raising responsibility, and the creative search for ways leading to the optimal final national economic result at minimum cost."<sup>10</sup>

Economic management organ personnel require an especially high level of economic training with the orientation toward the realization of the public interest in any sector. As is known, the functions of officials, associations, ministries, and departments are predominantly addressed to the solution of economic problems. Therefore, it is essential to expand their economic training<sup>11</sup>, especially in the area of forecasting and resource utilization. Screening and certification should be widely used as a means of promoting the most capable to positions of leadership.

The improvement of the functional content of labor and working conditions is one of the conditions to the qualitative growth of the subjective factor in the productive forces. The realization of the possibility of releasing 25-30 million people from monotonous and strenuous manual labor means raising the creative potential of the aggregate work force to a new level.

The role of the working people as the first productive force can be raised significantly by developing their creative initiative in improving the work of enterprises, branches, regions, and the entire national economy.

Of late, we have raised the economic independence and responsibility of enterprise collectives, as demonstrated by the law on labor collectives. Once every 5 years, there are broad public discussions of the perspectives of the nation's economic and social development. We should also use such forms as contests for ideas, developments and proposals; the organization of analytical teams, laboratories and scientific centers to study major problems, in particular, the evaluation of the optimality of plans for the development of individual complexes, all production, and incentive systems. It would appear that there should be an annual contest for the best planning decisions for all major projects and directions of economic development and that various material and moral incentives should be used in the process. In our opinion, such creative initiative of labor collectives should be backed by state law.

The second direction in raising today's productive forces to a new level is the utilization of fundamental attainments of the scientific and technological revolution in all factors and form of production organization. The increase in new knowledge is always an increase in the spiritual and and a certain sense the potential productive power of society. When this knowledge is

directly incorporated in production, it becomes a real productive force. It is appropriate to note here that our country's scientific complex is one of the most powerful "generators" of world scientific thought. It has made a major contribution to the scientific and technological revolution, in particular, to nuclear physics, laser technology, microchemistry, biotechnology, and cosmology.

The already accumulated potential of fundamental knowledge is essentially sufficient to raise the material productive forces to a qualitatively new level. Therefore the most important task in the next few years is to secure the large-scale acceleration of applied research and development and the earliest possible introduction of this potential in the national economy. The nationwide organization of the total and rapid introduction of the advances of world and national science into practice is more effective today than in the past. Its basic elements are: the programmed nature of the regional development and implementation of various structures for managing scientific and technical progress; the obligatoriness of high plan targets for the mass introduction of innovations; and the corresponding moral and material stimuli and sanctions for all organizations and personnel. At the same time, the future effort of the entire system of the nation's scientific organizations should be clearly defined at the national level and their attention should be focused on the principal directions of development of the NTR. There is a particular need for specialization in the development of new types of machines and fundamentally new types of materials, in the development of biotechnology and human physiology.

Economic science is called upon to solve special problems. Economists together with specialists in the natural and technical sciences must secure the broad and accelerated introduction of all or the most important basic advances of the scientific and technological revolution in production. The reference is to economic conditions for the development of an effective system of experimental, semiindustrial and industrial installations for utilizing the potential of thermonuclear processes, cybernetics, molecular chemistry, genetic technology; to the formulation of an economic concept of the development of qualitatively new branches and production facilities, and all manner of science-production centers, complexes and associations of the new type specializing in the realization of the fundamental attainments of the NTR. The development of economic science must also correspond to the revolutionary character of theoretical natural science.

In the development of the productive forces of socialist society, an important place is assigned to the development of a system of cybernetic-type machines, to imparting new, higher qualities to the material-technical base. Research on the attainments of the NTR leads to the conclusion that the use of high and low temperatures and pressures, the use of very high speeds, the thorough and adaptive working of the object of labor by machines, and automatic control based on microprocessors and sophisticated robots and electronics are the principal trends in technological development. Inherent in these trends are immense effect-forming factors, the analysis of which is a new task for economists. Some of these trends are already being realized in practice, in particular, in new generations of machines and in adaptive automated production.

The most general strategy of scientific and technical progress is the formation of a system of cybernetic machines that will use fundamentally new energy sources (hydrogen, sunlight, atomic, nuclear, etc.); that will employ electrochemical, microbiological and other technologies altering the basic properties of processed substances; and that possess cybernetic control to secure the selection of optimal work routines. The system will use such fundamental attainments of the scientific and technological revolution as electromagnetic and explosive technology, chemical synthesis, the development of new bioorganisms, artificial biosynthesis, intelligent robots, and many others. Such technology is capable of generating a vastly higher economic and social effect. The experimental efforts are very encouraging. We estimate that many types of equipment developed on the basis of fundamentally new scientific ideas are 5-10 or more times cheaper and more productive than conventional equipment. Experts estimate that computerized control of machine tool complexes reduce the number of production workers to one-third, adaptive automated production facilities -- to one-sixth, and automated plants -- to one-twentieth of the previous level.

The advantages of intensification based on the most progressive, highest advances of scientific-technical progress are attested to by the following examples: traditional improvements in technology can raise labor productivity up to 5-fold (with a 2-fold increase in the capital-output ratio); the introduction of highly reliable, electronically controlled technological blocks and transfer lines can raise labor productivity 12-fold (while raising the capital-output ratio 1.4-1.8-fold); the respective figure for limited-operation and single-stage technology is 14-fold (with a declining capital-output ratio).

There is reason to expect a type of technology that will be investment-conserving per unit of useful effect in the future. It will make fundamental corrections in the rate of accumulation and will substantially accelerate the growth of effectiveness of socialist production.

The potential of attainments of the NTR in the development of new materials with unique properties is enormous. Thus, experts in the field of theoretical chemistry believe that 40 carbon atoms and 82 hydrogen atoms alone can produce 62.5 trillion distinct substances with different properties.

The significance of cybernetic and holographic technology in the development of the creative character of labor and in establishing a relatively strict technological relationship between members of society and labor collectives is also great. Labor will be increasingly oriented toward the fulfillment of socioeconomic functions, toward the management not only of aggregate forces of nature, but the aggregate movement of the economy as well. As a result, the socialization of labor is raised to a new level and acquires general national economic scale.

Consequently, the qualitative transformation of the productive forces based on scientific advances and the advantages of socialism will have its own levels, its own sequence of tasks, and its own schedule.

General features of the new level of the productive forces in the area of their content will evidently be its formation primarily on the basis of the latest advances of the NTR and progressive forms of organization (science-production associations, complexes) that primarily use large automated systems of machines and fundamentally new technologies in all sectors of production and consumer services. The result will be approximate equality in technical inputs per production worker and the total disappearance of heavy manual and monotonous mental work. The share of the creative functions of blue-collar and kolkhoz workers will equal or surpass the present level of these functions for engineering-technical personnel. There will be a considerable increase in the direct participation of all working people in the management of the economy of enterprises, branches and the national economy. All this will make it possible to complete the elimination of substantial distinctions between workers and peasants, which will be one of the principal features of the culmination of the construction of developed socialism.

Future planomernost' [development according to plan] will be optimized to a greater degree on the basis of the broad participation of the masses in computer-aided management. The level of "marketability" of social production will decline. As a result of its high effectiveness, the marketability of products from personal household plots and certain types of "homework" will disappear. On the whole, the level of productivity of social labor will substantially surpass that of the technically highly developed capitalist countries. This and many other features will mean that developed socialism as the stage of the first phase of the communist formation will prepare the historically necessary prerequisites for the direct transition to total communism.

The productive forces of communism will be formed in the more distant future. They will be able to ensure the production of material goods on the basis of needs. They will make it possible to increase workers' free time and to transform the work of all workers into a creative process, including the direct management of the economy. As a result of cybernetic technology, the continuous creativity of the work force will become not only their need, but the technological demand of production as well. Under communism, for the first time in the history of mankind, the enormous analytical capacity of the automatic system of machines will be equal to the creative essence of the aggregate worker. This will raise the socioeconomic effectiveness of all social labor to a historically new level.

The disclosure of the strategy of the progress of the social productive forces as universal forces serve the political economy substantiation of the improvement of developed socialism and its transformation into full communism.

Special importance is attached to the qualitative transformation of the productive forces. In this regard, there must be more sophisticated organization of production that takes into account its vast scale, its dynamicity, the interaction, and interpenetration of technico-economic, socio-political, and spiritual and ideological factors.

The CPSU policy of accelerating scientific-technical progress, promoting the rapid development of machine building, establishing new production facilities,

and converting all branches to the highest world standards is playing an ever greater role in the system of organization. The implementation of this policy is associated with qualitative changes in the structure of reproduction, in its rate, in the forms of specialization, cooperation, and concentration. It envisages the renovation of investment policy, and the organization of new, adaptive production and economic structures, which requires enormous material expenditures of creative labor and the resolution of the problem of securing its most effective use. At the present time, annual capital investments in the nation's economy are in excess of 150 billion rubles, which is almost 3 times more than all prewar investments; over 45 billion rubles are allotted for education and science. In the eighties alone, total capital investments will grow 1.4-fold.

Resources allocated for the development of the productive forces must increasingly represent scientific, universal labor. As a rule, the complexity of this labor increases in proportion to the use of fundamental ideas. At the beginning of the branch production cycle today, up to 20 percent of all allocated resources are frequently expended on scientific preparations. In the future, this share may amount to 30-40 percent or more, which will dramatically accelerate scientific-technical progress. Let us note another particular. The realization of fundamental scientific achievements requires roughly 2-3 times higher expenditures on their practical application (according to the data of some specialists) and 5-10 times or more expenditures compared with the cost of basic research. Consequently, in the future there will be a need for enormous accumulations, especially for the intensification of material production on the basis of fundamental scientific conclusions. Therefore, the following conclusions seem legitimate: the time has come to raise the accumulation norm for the acceleration of scientific-technical progress and for the formation of fundamentally new branches; the rational use of material and labor resources is a key problem in the further development of the productive forces. Its resolution is in large measure determined by the effectiveness of forms of economic relations and the economic mechanism.

We have not yet developed a mechanism that guarantees the maximum effectiveness of functioning of all production. This point is confirmed by shortcomings in the utilization of advances in science and technology, productive capital, raw material and labor resources. Some researchers are wont to depict improvements in the economic mechanism solely as the modernization of forms of economic relations. But this is clearly insufficient. The wholeness of the socialist economy necessitates that the optimal development of the productive forces of labor and forms of economic relations be examined simultaneously. Therefore, we believe that it is theoretically more correct to regard this mechanism as the organization of the functioning and development of both aspects of the communist mode of production.

At the 26th CPSU Congress noted, the very content of the economic mechanism in the eighties must secure the maximally complete utilization of the potential and advantages of developed socialist society. "One of the urgent tasks of improving planning and management is to select the most effective directions of development of the national economy and the main links that will make it

possible to move the nation's economy rapidly along the intensive path."<sup>12</sup>

The country has amassed a certain amount of experience in optimizing the functioning and development of the productive forces. However, this experience is not always utilized widely and on a thoroughly correct methodological basis. Thus, expert appraisal of 11,000 capital construction projects revealed that approximately one-third of them are not optimal and do not take national economic needs into account. The "price" of the failure to take the national economy's interests fully into account was 8 billion rubles.

One of the principal ways of making rational use of resources is to ensure a strictly obligatory comparison competing variants at all level and the selection of variants that are optimal from the standpoint of society as a whole. In this regard, there should be substantial improvement in the methods used to compare possible variants of investment and to supplement them with the assessment of all types of effect and aggregate expenditures for the entire service life of the equipment. At the same time, there is also a need to adjust the practical orientation toward the economic effectiveness norm. Under the conditions of developed socialism, it is proposed that only the attainment of the maximum national economic economic and social effect owing to it be considered the criterion of optimal development vis-a-vis others.

The establishment of such a criterion as a strictly obligatory general economic norm will prompt collectives under the conditions of their growing economic independence and increased responsibility to compare possible variants of the development of the productive forces and forms of economic relations and to implement the ones that are optimal for society in general. This criterion can be used to draft a Program for the Acceleration of Scientific-Technical Progress. Individual models of technical retooling of regions and branches prepared on its basis would promote the formation of effective production facilities. It would be well to institute a procedure under which large-scale development projects long before their adoption would be widely discussed in the press and in scientific collectives and special groups of specialists at all levels would render responsible conclusions on them together with their evaluation of the degree to which they utilize attainments of the NTR and achieve a maximum effect.

Another important avenue to the organization of the most effective development of the productive forces is the establishment of a more direct and meaningful relationship between the material and moral encouragement for all categories of working people according to the attainable result.

Promising measures designed to increase the material and moral incentives and responsibility of enterprise collectives and individual workers for achieving the best results at enterprises, in sectors and workplaces have been developed and partly tested. This experience should now be used to establish a direct relationship between wage increases (and all other forms of encouragement) for all personnel, especially in management and in organizations belonging to the nonmaterial sphere and the increase in effect at branch, regional and especially the national economic levels. For example, the linkage of wage increases to the growth of national income or its individual forms will intensify the personal material interest of all working people in the maximum

development of the productive forces as a whole. Under these conditions, there will be a higher degree of reciprocal demandingness for the most complete utilization of the potential and advantages of our system. The present elements of subjectivism and the dissipation of resources will be eliminated in a shorter time thereby creating real prerequisites for effecting dramatic increases in the effectiveness of development and functioning of the productive forces.

Thus, the economic theory of developed socialism and socialist management practice should be supplemented by work on a number of problems of problems that have a bearing on raising the productive forces to a qualitatively new level. This will enrich the concept of socialist expanded reproduction of the intensive type and will make it possible to depict the improvement of developed socialism as a process of deep-seated quantitative and qualitative change that opens up fundamentally new possibilities for accelerating economic and social development and for generating new perspectives for communist construction.

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2. K. Marks and F. Engel's, "Sochineniya" [Works], Vol 25, Part I, p 274.
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7. See: V. A. Medvedev, "Upravleniye sotsialisticheskim proizvodstvom" [Management of Socialist Production], Moscow, Politizdat, 1984, p 6.
8. M. S. Gorbachev, "Zhivoye tvorchestvo naroda," p 12.
9. "Materialy Plenum Tsentral'nogo Komiteta KPSS, 14-15 iyunya 1983 goda" [Materials of the Plenum of the CPSU Central Committee, 14-15 June 1983], Moscow, Politizdat, 1983, p 10.
10. Ibid., p 40.
11. Every year, 2.8 million workers receive training in various forms; 12

percent of the nation's students are enrolled in economics faculties.

12. "Materialy Plenuma Tsentral'nogo Komiteta KPSS, 26-27 dekabrya 1983"  
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INVESTMENT, PRICES, BUDGET AND FINANCE

GOSPLAN OFFICIAL ON OBSOLETE CAPITAL STOCK RETIREMENT

Moscow PLANOVYE KHOZYAYSTVO in Russian No 4, Apr 85 pp 85-93

[Article by A. Tsygichko, doctor of economic sciences; sector chief, Scientific Research Economics Institute under USSR Gosplan, under the rubric "Problems of Scientific-Technical Progress": "The Retirement of Obsolete Means of Labor from Use"]

[Text] Improvement of the methodology of planning capital investments, capital construction and the activation of new productive fixed capital anticipates the development of methods for the planned retirement of obsolete means of labor and production capacities from use. Without this, it is impossible to count on the technically and economically substantiated effectiveness of the investment process. The planning of this process cannot be considered complete if we lose sight of any part of the expanded reproduction of capital on a new technical basis. However, sufficient attention is still not given to the problem of determining society's need to retire obsolete means of labor and to attain through the plan the desired volume of their temporary or final retirement from production.

The need for effective planning methodology of this type is keenly felt during periods of rapid improvement of implements of labor and technologies that is occasionally spasmodic in individual branches and production facilities in connection with the advent of fundamentally new technology; during the implementation of large-scale product renovation programs; during periods of large-scale branch structural change associated with the declining role and elimination of individual traditional types of production; and in the event of the growing scarcity of any critically important production resource (besides capital investments) that inhibits economic growth.

The existing methods of planning the renovation of existing production do not fully meet the mounting need to accelerate the retirement of obsolete fixed capital, especially for the purpose of releasing labor, material, energy, and financial resources for new means of labor and for technically progressive enterprises and projects. This need cannot be met merely through mandatory planning of the reproductive structure of capital investments and allocations for the technical retooling and reconstruction of enterprises. The increase in these expenditures can freely lead to the accelerated replacement of obsolete means of labor until the problem of shutting down an existing

production facility arises. On the one hand, the increase in these expenditures is encouraged, while on the other hand there is strict support for such constraints as the restructuring of production without shutting it down, the inadmissibility of retiring or eliminating capacities that are still fit for operation, and if the urgent need arises, the strict coordination of such decisions at the highest level of planning. The realization of such a demand in practice frequently produces good economic results, especially at relatively new enterprises. But society's need to accelerate the replacement of fixed capital may be substantially higher than attainable with the given constraint.

The continuousness of production and the restructuring of enterprises and projects on a new technical basis can be combined harmoniously only up to certain limits. The greater the degree of reconstruction, the more difficult it is to realize both goals at the same time. It is common knowledge that it is occasionally difficult to carry out reconstruction work in its entirety and on schedule under extremely confining conditions that preclude the full utilization of modern construction equipment and technology at enterprises that are in continuous operation.

In most cases, however, it is possible to replace all equipment and to rebuild worn-out buildings and structures gradually. But this complicates the task of modernizing ongoing production quickly. What is more, the striving to use the resources allocated for technical retooling and reconstruction, which is difficult within the allotted time, objectively leads to the investment of a considerable part of them in the expansion of existing enterprises and to a corresponding increase in the number of jobs, thereby raising the level of unsatisfied demand for manpower and to the ever increasing shortage of manpower at new production facilities. The replacement of reconstruction by expansion is in actuality encouraged by the fact that only the increase in capacities is planned as a result of technical retooling and reconstruction without any indication being given of the magnitude of retirement of obsolete fixed capital associated with these measures.

The decree of the CPSU Central Committee "On the Work Experience of the Collective of the Dnepropetrovsk Combine Plant imeni K. Ye. Voroshilov in Increasing the Effectiveness of Utilization of Production Capacities Based on the Certification and Rationalization of Jobs" calls attention to the irrational use of resources allocated for the development of existing enterprises. It states: "Many ministries and departments, associations and enterprises, instead of increasing the utilization of existing production facilities, reconstruction and technical retooling, are primarily oriented toward the activation of new capacities and toward establishing additional jobs, frequently without regard to the real possibility of filling them."<sup>1</sup>

Such diversion of resources complicates still more the realization of the task of modernizing ongoing production on the scale required for economic development.

Under what conditions are decisions to halt production entirely or partly or to shut down obsolete enterprises and facilities for the purpose of

accelerating the modernization of the production apparatus feasible? It is sometimes not particularly difficult to substantiate such decisions since ongoing production is frequently restructured in the form of new construction, when modern shops and whole enterprises are established on new or adjoining areas in place of old ones that are closed down after the activation of new ones due to the fact that their modernization is not feasible. In such a case, we achieve, albeit in special form, continuous production and the continuous utilization of manpower, which is especially important in the case of production facilities that must produce their products without interruption in order to satisfy the national economy's needs, when the nature of the raw materials that are consumed precludes their being maneuvered in space or stored for long periods of time and when reserve capacities do not exist at analogous enterprises. However, despite the original intent of the reconstruction plan, obsolete capacities are not necessarily closed down when construction work is completed. The result is the diversion of labor, material, and energy resources needed for new projects.

It is more difficult to close down production before new capacities are activated if existing enterprises are the construction site. The difficulty stems from the fact that the old capacities are still functioning and that the labor effort is limited. Thus the decision to halt the production process entirely or partly can be economically justified if there is, for example, the possibility of using permanently or temporarily, partly or entirely released labor and material resources at analogous, more highly sophisticated enterprises that have job vacancies and that are not operating at full capacity.

Such factors as the shortage of manpower for new enterprises and the underutilization of their capacities are also justifications for the decision to close down obsolete enterprises and facilities permanently, to mothball them or to shut them down for a long period of time so that they can undergo thorough reconstruction, assuming the mobility of labor, material and energy resources. The transfer of such resources to technologically progressive enterprises accelerates economic growth through the development or more complete utilization of their technical base which ensures higher labor productivity, the better utilization of energy, raw materials, and supplies, and the improvement of product quality.

The transfer of production resources that accompanies the liquidation or mothballing of obsolete means of labor can also take place at active enterprises where expenditures on expansion result in the establishment of capacities that are not sufficiently provided with manpower, raw materials, supplies, and energy. This is, in particular, the purpose of the successful job certification and rationalization effort at the Dnepropetrovsk Combine Plant. In 1979-84, these measures enabled the plant to raise the equipment shift operation coefficient, to increase the output-capital ratio, to improve the use of production capacities, to release 700 surplus and obsolete machine tools, to increase production without increasing the size of the work force, and to raise productivity at a rapid rate (by eight percent a year on the average).

The planned retirement of obsolete equipment does not necessarily presume its ultimate destruction. Some of the technical means can be used (especially after they are modernized) in the course of basic reconstruction as well as at other enterprises under construction or reconstruction. Thus they are only temporarily retired from use.

The transfer of resources can also be accompanied by the planned functional retirement of the means of labor at obsolete enterprises, i. e., by their partial shutdown or by the overall reduction of their overall operating time without being removed from the enterprises' balance. At the same time, they are not counted as assets in the balance of capacities. Part of the enterprises, facilities or large units taken out of operation may for a certain period of time be preserved as backup capacities that are not counted as a real capacity in output planning.

Irrespective of the form in which the planned retirement of productive fixed capital from use occurs, it is always aimed at securing the optimal use of the latest capacities and at solving problems associated with the formation of new branches and production facilities and territorial production changes. It is probably possible to agree to the corresponding temporary disruption of individual production ties, to additional outlays on the training and relocation of blue-collar workers, and to the construction of additional housing, cultural and service facilities.

The shortage of production resources (especially labor resources) for the erection of new factories and plants as well as new facilities at existing enterprises will be felt for a long time owing to the possible prolonged stabilization or even reduction of the work force, the large backlog of construction work, and the need for large-scale structural and territorial change in the economy. While they can be released in sufficient volume from existing production as a result of reconstruction, production must be shut down entirely before equipment can be replaced en masse. Obsolete enterprises and facilities should be taken out of operation on a centralized, large-scale basis or should be closed down for major reconstruction that will make them technologically progressive.

The accelerated replacement of obsolete equipment should be accompanied by the ever greater withdrawal of production capacities from use, i.e., by the total or partial retirement of enterprises and production facilities. At the present time, the retirement of fixed capital is at a relatively low level and the retirement coefficients are declining. Attempts to increase the latter cannot fail to affect the turnover rate of production capacities which should grow. In general, the turnover of capacities and productive fixed capital in physical form is to a certain degree independent. At the same time this independence is possible within certain limits.

Thus, it is possible to replace part of the equipment and passive elements without substantially disrupting the production process, especially when maneuvering own reserve capacities. However, if the replacement rates are significantly intensified, this will inevitably lead either to a decline of the enterprise's capacity for a long time or will necessitate closing it down for a certain period of time. When this is forbidden, it is impossible to

count on the dynamic replacement of obsolete equipment, the retooling of production and the work force on a new technological basis.

If a contradiction arises between the continuousness of production and the need for its rapid modernization and is resolved in favor of continuousness, the scale of retirement of fixed capital on the average will not be very great. At enterprises that underwent reconstruction between 1971 and 1975, the scale of retirement of fixed capital was less than 30 percent; in 1976-1980 -- approximately 20 percent.

The demand for the continuousness of production and for the inadmissibility of reducing capacities establishes an objective boundary to the acceleration of the replacement of obsolete equipment. But calculations of the effectiveness of such measures can also be an obstacle to the substantiation of the basic reconstruction of enterprises with the replacement of a large share of the fixed capital, especially if this requires shutting down production for a long time since expansion or reconstruction without the large-scale replacement of obsolete equipment is frequently more effective than basic reconstruction. This is attested to, for example, by planning data on rebuilt and expanded industrial enterprises in 1971-1980. Nonetheless, the effectiveness of capital investments calculated, let us say, on the basis of the increase in capacity, output or labor productivity cannot always be a sufficient criterion for resolving the scale of reconstruction. When the possibility of reconstruction without shutting down production is limited in every given period and expansion and new reconstruction are not properly provided with labor, material and energy resources, the need for the retooling of labor and production can be realized to a considerable degree through major reconstruction or by closing down obsolete enterprises and facilities. This is most economically feasible under the given conditions, since the optimal use of all production resources is achieved in this way even though the adopted methods of calculating effectiveness might not reflect this point.

The demand for the continuous operation of rebuilt production facilities and for the substantiation of the effectiveness of the various forms of reconstruction probably in large measure determined the fact that the actual retirement of fixed capital in industry in recent years was roughly one-third lower than contemplated in the planned balance of productive fixed capital. The need for the higher level of retirement of obsolete equipment was determined first and foremost by the growing shortage of blue-collar workers due to the deteriorating demographic situation, the limited possibility of hiring workers from other branches, etc.

The movement of capacities is to a certain degree independent of the movement of fixed capital in physical form. On the one hand, the capacity of enterprises, facilities and units may decline with the passage of years (as equipment wears out and becomes obsolete) at the same time that the initial full value of the means of labor remains the same. On the other hand, when an enterprise is closed down for major reconstruction or when the shutdown of an enterprise is accompanied by the liquidation (even though not always immediately) of only part of the technical means since the other part is used in the reconstruction process, is modernized or transferred to other production facilities while the enterprise or facility is immediately retired

or shut down for a long period of time. It is for this reason that we occasionally see the coefficient of retirement of productive fixed capital surpassed. There is nothing alarming in this. What is more, such phenomena must become more frequent in order to ensure a higher return on capital investments, a higher output-capital ratio, the acceleration of the growth of labor productivity, inter alia, due to the improved balance of the dynamics of productive fixed capital and manpower, the higher degree of proportionality between the number of jobs and workers with the condition that optimal use be made of the latest means of labor. This is in particular the goal of the previously mentioned decree of the CPSU Central Committee which demands that we not permit the unsubstantiated creation of additional jobs when existing jobs are not entirely filled and that the total number of jobs be balanced against labor resources.

Based on the premise that the planning of the retirement of obsolete fixed capital is an important condition to increasing the effectiveness of social production, it is advisable to introduce a value indicator of such retirement. This is necessary in order to supply the latest means of labor to production capacities created as a result of expansion of the expansion of existing enterprises and the construction of new and to ensure the supply of labor, material and energy resources to new branches and production facilities; in connection with measures to raise technical inputs per worker and labor productivity at the beginning of the plan period at existing enterprises; in the interest of introducing fundamentally new equipment and technology and conserving material and energy resources per unit of output; the resolution of problems relating to the protection of the environment and the improvement of working conditions; in connection with the economic unfeasibility of modernizing, repairing, replacing, or liquidating worn-out and obsolete equipment, etc.

It is important to establish the following forms and the corresponding magnitude of retirement of productive fixed capital:

-- the final liquidation of worn-out and obsolete means of labor (which corresponds to retirement based on dilapidation and depreciation with the liquidation of equipment that has been idle for a long time);

-- the temporary withdrawal of fixed capital from use (e.g., for less than a year) in connection with the shutdown of an enterprise for major reconstruction without its being transferred to other organizations, with the alienation of means of labor that were previously in use but that are not slated to be in use during the year and their utilization for modernization or at newly built or rebuilt enterprises and facilities in a given branch and in connection with the transfer of fixed capital to other branches;

-- the functional retirement of fixed capital (the reduction of equipment operating time or the shutdown of part of the machine park due to the planned or economically substantiated curtailment of production at obsolete enterprises and production facilities); and

-- the mothballing of fixed capital in connection with the possibility of using it as reserve production capacities.

It also appears expedient to distribute targets for the retirement of productive fixed capital by year in order that the economic growth and technical development tasks that are to be resolved with the aid of retirement would be realized within a given five-year plan and to determine in all possible cases the magnitude of such retirement separately for buildings and structures, for machinery and equipment. In our view, the volume of retirement should be broken down according to the forms indicated above for the following measures: technical retooling and maintenance of existing production capacities; the reconstruction and expansion of enterprises without shutting them down; major reconstruction with the shutdown of production; the total shutdown of obsolete enterprises and facilities; and the partial curtailment of production at existing enterprises.

It is important to keep track of the average age of active and passive elements of productive fixed capital taken out of operation. It is also important to keep special lists of enterprises and facilities that are shut down for prolonged, major reconstruction during the plan period and lists of partially and permanently closed down enterprises and facilities that will transfer their labor, financial, material, and energy resources to other enterprises; to determine the number of personnel to be released, their potential utilization and additional economic effect; to calculate the expenditures required for the retraining, relocation and housing of released manpower.

The volume of socially necessary retirement of productive fixed capital must be determined before the plan is drafted. At the same time, it is essential to take into account the age structure of the means of labor, the existing and projected balance of jobs and manpower, the projected activation of new fixed capital, the requirement for additional manpower, branch and territorial particulars of the dependence of the turnover rate of productive fixed capital in physical form on the volume, correlation and quality of labor and investment resources.

It would seem that amortization policy should to a greater degree influence the planned acceleration of the replacement of obsolete fixed capital in the interest of increasing the effectiveness of social production and economic growth rates. If the social need arises to take not only worn-out and obsolete means of labor but also technologically related, still functional equipment that has not yet exhausted its service life out of operation for a long period of time or permanently, amortization norms should make provision for a special procedure for writing off the value of such fixed capital so as not to hinder the production renovation process.

The successful implementation of plans for retiring obsolete means of labor depends not only on the improvement of the corresponding planned forms and indicators, but also on the national economy's approach to the problem. It is very important when the replacement of productive fixed capital is simultaneously planned and interconnected for all branches of the national

economy thereby preventing the undesirable movement of noninvestment production resources, especially labor resources, between branches. There is a need for more complete and accurate accountability and effective oversight first and foremost over the operation of technologically progressive enterprises and facilities and the satisfaction of their requirement for labor, material, energy, and financial resources. The development of the methods for planning the retirement of obsolete fixed capital is ultimately aimed at generating conditions for using funds allocated for the reconstruction of existing enterprises for their intended purpose. Such development is oriented toward supplying new capacities, enterprises and facilities fully with resources, toward balancing increases in the number of jobs and the number of workers, and toward the acceleration of the retooling of labor and production on a new technological basis.

The implementation of plans for the large-scale retirement of means of labor that hold back the resources that are needed for new production facilities, for technologically progressive enterprises and facilities, for the assimilation of new equipment and technology is a difficult socioeconomic task. But it does not make any particular additional demands on investments, but presupposes the optimal use of newly created productive fixed capital.

The need to develop a special apparatus for planning the retirement of fixed capital is dictated by the fact that plans for forming the reproductive structure of capital investments, the calculated fixed capital balance, the projected movement of production capacities, and the planned balance of jobs and manpower (when it is instituted) are not intended to realize this task. All this does not mean the obligatory retirement or shutdown of production capacities. What is more, the retirement of fixed capital, capacities and jobs does not by any means exhaust or encompass every individual indicator or combination of indicators in this process and the forms of withdrawal of obsolete means of labor from use.

The fixed capital balance evaluates the retirement of means of labor due to dilapidation and depreciation, their transfer to other enterprises, but does not contain information on the temporary and functional withdrawal of fixed capital, on its mothballing, and on its age. The balance does not trace ties with measures to develop or shut down existing production or the objective function of the withdrawal of obsolete means of labor from use. The balance of production capacities interfaces with the fixed capital balance, even though it contains additional information on the modernization of the production apparatus. Thus the scale of liquidation of fixed capital not associated with the technical retooling and reconstruction of existing enterprises can be judged indirectly on the basis of the retirement of capacities. But this is also the source of exhaustive data on the volume, forms and reasons for retiring means of labor. Information on technical retooling and reconstruction reduces to data on the increase in capacities as a result of these measures without an indication of the corresponding scale of replacement.

The job balance in itself cannot bring about actual improvement in the utilization of the latest capacities without regard to the planning of the

retirement of obsolete fixed capital. After all, jobs are above all implements of labor that require a certain number of workers. And if the decision is made to eliminate a certain number of jobs, the movement of productive fixed capital in physical form will also be affected thereby.

The planning of the retirement of obsolete means of labor must coordinate and stimulate plans for the technical retooling and reconstruction of existing enterprises, balances of fixed capital, production capacities and jobs. It is called upon to orient ministries and enterprises toward the rational use of all resources and to provide them with an appropriate methodology.

Today, additional plan indicators are not viewed as the optimal way of improving the methodology of planning. Nonetheless, this is fitting when the reference is to criteria characterizing the effectiveness of the economic activity of enterprises and ministries. The expansion of these criteria is ineffective and makes the system of plan indicators of economic development unwieldy. Here, however, it is proposed that planning enter another area and, based on the interests of development of the national economy, that enterprises and ministries be relieved of obsolete means of labor by directive, and that investment resources allocated to them be used rationally. This is probably the only possible way to halt the economically undesirable trend toward decelerating turnover of industrial fixed capital in physical form and to bring about the considerable acceleration of the replacement of worn-out and obsolete equipment and technologies.

In the seventies, the rate of retirement of means of labor in industry almost entirely corresponded to the most progressive world prototypes, this process subsequently decelerated. Thus, in 1966-70, the average annual coefficient of retirement of productive fixed capital due to dilapidation and wear was 2.2 in 1981 and 1.3 in 1981-83. Correspondingly, the calculated actual service life of means of labor, determined with the aid of a special technique that takes into account not only average annual coefficients of retirement but also growth rates of fixed capital increased from 18 years in 1966-70 to 22 years in 1971-80 and 27 years in 1981-83.

At the same time, it is important to note that in the eighties the rate of replacement of fixed capital, expressed through calculated actual service life, was, as a result of its continuous prolongation, for the first time lower than the normative rate which is thus not optimal. Consequently, the amortization norms are not the only restraining factor in the acceleration of the replacement of obsolete means of labor even though they do not correspond to the objective need for such acceleration. The reason lies in the insufficiently effective planned management of the retirement of obsolete fixed capital with due regard to the potential for the more rational use of production resources liberated in the process and the more complete utilization of the newest capacities. The improvement of the appropriate planning methods depends in large measure on changes in the approach to the demand for the restructuring of production without shutting it down and the undesirability of the large-scale retirement of capacities and shutdown of technically backward enterprises and facilities. Such changes must find

expression in methods of substantiation and forms and indicators of plans for the retirement of means of labor.

The present initiative to develop and improve specific forms of planned management of the accelerated modernization of existing fixed capital, to replace obsolete equipment, to eliminate technologically imperfect jobs, and to improve the utilization of the latest equipment comes from below. However, central planning cannot stand aside from these problems because only within the framework of central planning is it possible to consider all the national economic consequences of renovation measures and to determine the required maneuvering of labor, investment and material resources based on the socially volume of retirement of obsolete means of labor. The rationalization of this process will promote the struggle for the more complete utilization of production capacities, machinery and equipment.

The renovation policy examined by us is unquestionably not solely the cause of individual enterprises and ministries. It is to a much greater degree a national economic problem.

State plans for the retirement of obsolete productive fixed capital are intended to satisfy the general economic interest in controlling this process. However it is probably impossible to reduce the organizational aspect of the question entirely to the technology of planning.

The drafting and implementation of these plans would probably be more successful if there were a special system (not associated with branch interests) of permanent or periodically functioning organs of central subordination at the local level. These organs should be vested with the right to oversee the utilization of the latest capacities, to secure the utilization of new, uninstalled equipment, to determine the possibility of carrying out reconstruction work without shutting down production and the feasibility of the latter, and the justification for decisions to close down enterprises and facilities. Such organs could be assigned the responsibility of taking care of fixed capital retired from production, participating in decisions on their further utilization, justifying the rational use of liberated labor, material, energy, and financial resources. The recommendations of these organs can serve as an important initial data base for drafting state plans that determine the scale and forms of retirement of obsolete fixed capital. When the plans are updated, such indicators must be coordinated with the proposals of ministries, departments and local planning and management agencies.

Special organs of central subordination at the local level can also oversee the implementation of plans for the retirement of obsolete fixed capital, the utilization of reconstruction allocations for their intended purpose and the application of liberated production resources. They must participate in the resolution of the conflict situations that arise between individual enterprises, between enterprises and financial organs, and between clients and contractors in the course of capital construction, and other conflicts associated with shutdowns for reconstruction or the permanent closure of enterprises and facilities, and the mass liquidation of fixed capital.

Improvement of renovation policy and modes of implementing this policy on the scale of the national economy will ultimately promote the more economical use of the accumulated means of labor and the nation's production potential.

#### FOOTNOTES

1. PRAVDA, 13 November 1984.

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## RESOURCE UTILIZATION AND SUPPLY

### GOSSNAB OFFICIAL EXPLAINS INDICATOR SYSTEM

Moscow MATERIAL'NO-TEKHNICHESKOYE SNABZHENIYE in Russian No 3, Mar 85  
pp 46-51

[Interview with N. M. Volkov, chief of the Planning and Finance Administration of Gossnab; date and place not specified]

[Text] A number of basic appraisal indicators, which describe the activity of territorial bodies, have been introduced and are in effect within the USSR Gossnab system in order to increase the responsibility of supply and market organizations for the timely and qualitative provision of consumers with material resources in the required type and amount.

What are these indicators? How are they affecting the improvement of logistics management? Are the interests of the worker being combined with the interests of the enterprise? -- N. M. Volkov, the chairman of the USSR Gossnab Planning and Finance Administration, answers these questions at the editors' request.

[Question] According to what basic indicator is the appraisal of the activity of supply and market organizations within the USSR Gossnab system being made at the present time?

[Answer] In accordance with the CPSU Central Committee and the USSR Council of Ministers decree "On Improving Planning and Strengthening the Influence of the Management Mechanism on Raising Production Efficiency and the Quality of Work", the USSR Gossnab has carried out a series of measures to further improve the economic indicators and methods for evaluating the activity of our system's supply and market organizations, to create interest in them, and to increase responsibility for the economic and rational use of material resources in the national economy.

The indicator of plan fulfillment based on the wholesale sales volume of products for the type and variety, which have been stipulated by the contracts concluded with the consumer, has been established as the main indicator for

evaluating the activity and computing the funds for the economic stimulation and awarding of bonuses to workers in the supply and market organizations. In this regard, the territorial bodies have been granted the right to decrease the delivery of products to consumers that have above-norm and unwarranted stocks. The commodity turnover indicator is excluded from evaluating the activity.

Additional incentives for supply and market organization workers for the preparation of products for production input; the achievement of the planned rental volumes for instruments, equipment and other technical systems; and also the finding and introduction of superfluous material values not being used in enterprises and organizations into economic turnover, have been introduced.

Along with the indicators that describe the amount of activity of enterprises and organizations in the state-wide logistic system, the introduction of indicators and economic norms, which describe the qualitative aspect of their activity, into planning work practices is also acquiring more and more importance. Among these indicators are: deliveries of products according to direct long-term economic ties, a guaranteed integrated supply, the volume of services provided to consumers, and the rental of instruments, equipment and other technical systems.

Costaccounting relationships have been established between the union main supply administrations and the territorial bodies. This permits work effectiveness to be increased, the supplying of the national economy to be improved, and planning discipline in the delivery of products to be strengthened.

A statute on intra-organizational accounting for associations and administrations with respect to the delivery of products and a number of other method and instructional documents, which contribute to improving planning and raising the level of economic work in the management and financial activities of USSR Gossnab bodies, have been introduced.

The carrying out of these measures is having a positive effect on perfecting and improving the logistics of the national economy and on raising the economic effectiveness of the activity of the USSR Gossnab system.

[Question] How is the new indicator for evaluating activity linked with savings of material and technical resources? Does it not have a negative influence on following a thrifit regimen?

[Answer] The USSR Gossnab is carrying out a number of measures aimed at limiting the negative effect of the wholesale sales volume and received profit indicator and also at strengthening the economic interest of supply and market organizations in preventing the formation of above-norm stocks of material resources among consumers by regulating deliveries depending on the presence of stocks in the consumers.

In accordance with the normative acts in effect, it is not considered a failure to deliver when the buyer refuses to receive the products or does not remove

them from the warehouse of the supplier (manufacturer) within the period stipulated by the contract and also when logistics organizations, which are performing the function of monitoring the condition of stocks that has been placed upon them in accordance with item 31 of the statute on Deliveries of Production and Technical Products, decrease the amount of products delivered or change the period of their delivery to associations and enterprises that have above-norm stocks or superfluous products.

In order to save material resources, prevent the formation of above-norm stocks and limit the distribution of products to consumers to please the fulfillment of the wholesale sales and profit plan, USSR Gossnab supply and market organizations adjust--during the setting of funds for economic incentives and the awarding of bonuses -- profits by the amount which was not received due to limiting the distribution of products to consumers who have above-norm stocks of similar types and exclude during the evaluation that part of the profits which was obtained by overfulfilling the planned warehouse sales product volumes.

The corresponding norm documents prescribe that -- during the calculation of the fulfillment of quotas for the growth in labor productivity -- the actual wholesale sales product volume from the warehouses and from stores be increased by the cost of the products that are not delivered to consumers who have above-norm stocks of similar types of products.

The USSR Gossnab has done quite a bit to limit the negative effect of the wholesale sales volume indicator on the chucking out of products from enterprises according to deliveries. It is still impossible, however, to say that all questions have been resolved. You see, there still exist quite a few cases where supply and market organizations distribute products to consumers in amounts, which exceed the current demand for them, in order to insure the fulfillment of the plans for profit and labor productivity.

Thus, the supply and market organizations within the USSR Gossnab system did not completely fulfill the plan for wholesale sales in accordance with concluded contracts (accepted for fulfillment by job authorizations), and products worth more than one billion rubles were not delivered according to the contracts. At the same time, products worth almost one billion rubles more were dispatched from enterprises in accordance with above-plan deliveries.

This occurs for various reasons. First, the wholesale sales volume indicator does not correspond in a number of cases to the indicator for the volume of deliveries of products to consumers in accordance with concluded contracts (adopted for execution by job authorizations and orders).

Second, and this is perhaps the main argument, the majority of union republic Gossnabs and main territorial administrations are not using the capability which has been granted to them to adjust indicators and exercising the right to limit distribution of products to consumers that have above-norm stocks. The state statistical bookkeeping, which is now in effect concerning the presence of above-norm and superfluous material resources in enterprises and

organizations (form 15-SN), is being little applied in the practical work of supply and market organizations during the regulation of deliveries to enterprises that have above-norm stocks. You see, it is received late in the supply and market organizations and not from all enterprises and organizations. Moreover, the reliability of this accounting is not being insured.

Third, in a number of territorial bodies (the Krasnoyarskiy, Sredne-Volzhskiy, Tatarskiy, Yuzhno-Uralskiy, and other main territorial administrations), the indicator for the fulfillment of the wholesale products sales plan is still the main indicator for awarding bonuses to warehouse workers (warehouse managers, commodity experts, storekeepers, sector chiefs, and other workers). Bills of lading which have been written by the goods departments, have essentially still not become for the above-mentioned workers an order for the issue of products to the consumer. The effective period of the bill of lading is not established or is violated. In pursuit of the overfulfillment of the wholesale sales plan, expensive products are first of all dispatched from a warehouse, and inexpensive products, which are required at that moment, are received by the consumer a month or more after the writing of the bill of lading. In order to eliminate this deficiency, it is necessary to reexamine the Statute on Awarding Bonuses to Warehouse Workers quickly. The distribution of products to consumers within the established periods and in accordance with bills of lading must become the main indicator for the material encouragement of this category of workers.

Fourth, inspections of supply and market organizations on the spot testify that the responsible workers (directors and engineer technical workers in the commodity services) in a number of territorial bodies have a poor knowledge of the existing normative acts on the procedure and indicators for accumulating funds for encouraging and rewarding workers. This also has a negative effect on saving material resources and limiting the distribution of products to consumers that have above-norm residuals.

Other negative questions in determining the wholesale product sales volume indicator and its negative influence on saving material resources also exist.

[Question] Why are the measures, which are being taken by the USSR Gosnab to attract above-norm residues into economic turnover, not exerting substantial influence on their decrease in the national economy?

[Answer] The solution of the stock problem is an important national economic task. In saving material resources, much depends on skilfull planning, the distribution of resources, and their concentration where they provide the greatest effect.

In this connection, the correct management of production stocks, which represent quite a large reserve in overcoming or, in any case, ameliorating the scarcity of a number of resources, has exceptionally great importance.

Comrade N. A. Tikhonov, chairman of the USSR Council of Ministers, pointed out during the 26th CPSU Congress: "One cannot reconcile himself to the fact that

many enterprises are maintaining above-norm equipment, raw material and materials -- especially metal -- at a time when others are short of them... It is necessary to increase the role and raise the responsibility of the USSR Gosnab and its territorial bodies in shifting material resources and using them rationally. We cannot regard the USSR Gosnab bases, which exist in the economic rayons, as simply warehouses. They must prepare and sort materials and effectively supply them to the customers in the required variety and sets."

Stocks are really an enormous reserve for improving management effectiveness. The acceleration of their turnover by only one day provides a savings of approximately two billion rubles.

The critical tasks of providing strict control over the proper use of material resources, the condition of stocks and the involvement of above-norm and unused material valuables in economic turnover have been placed on USSR Gosnab bodies. Measures have been provided for their qualitative solution--by redistributing and regulating deliveries, purchases and sales of products based on commission principles; conducting all-union and zone fairs; and supplying services in finding customers. USSR Gosnab bodies have been given the right to change delivery periods and decrease the amount of products delivered if the customer has above-norm and unused material resources.

There are, however, substantial shortcomings in the management of stocks in the national economy. The above-norm stocks continue to grow in industry and construction. This is explained by a number of reasons.

First, the supply and market organizations within the USSR Gosnab system do not always have reliable data on the presence of stocks in the industrial enterprises, construction and other organizations that are being serviced by them; and they analyze the reasons for their formation poorly. Not having available specific data, they make poor use of the right that has been granted to them to limit the distribution of products to customers that have above-norm stocks. It happens as follows: An enterprise does not fulfill its production plan and above-norm stocks are formed at it. On the one hand, the territorial bodies withdraw the above-norm stocks from it; on the other -- they make deliveries of products in accordance with the initially approved production plan. The appropriate planning bodies (the USSR Gosplan, ministries, departments, and the USSR Gosnab) should make changes in the logistics plan at the same time there are changes in the production plan.

Second, the qualitative solution of this important question is being held in check by the complexity of the system for obtaining sanctions for the sale of valuables that have been amassed. For example, in order to put into the turnover the above-norm and unused resources that have been formed, enterprises and organizations must submit information on their presence to the higher body which makes an appropriate decision about redistributing these valuables within a month or 45 days (if the enterprises and organizations are located in the rayons of the Far North and localities on the same footing as them, Far East, Central Asia, and Siberia) from the day this information is sent. USSR Gosnab territorial bodies can make a decision about putting these

material resources into the economic turnover on the representation of the enterprises and organizations only in a case where the higher body refuses to redistribute the above-norm and unused material valuables.

Third, the union main supply administrations are providing little practical help to the territorial bodies in the sale of above-norm and unused material valuables. The resources, which are being attracted to the economic turnover, are not always being used to cover planned requirements. There are also other important shortcomings.

The organization of control over the use of material resources also needs improvement. This is an important work sector. Inspections reveal quite a few cases of unfunded distribution of scarce material resources not according to assignments. However, the retention of deliveries of similar materials from violators of funding discipline is not always fully being done.

The inspections which are being performed by workers in the USSR Gossnab system and other bodies, help to evaluate the status of supplying resources to specific consumers correctly, and they are providing an opportunity to define the direction of their expenditures more exactly and to reveal and call to order the violators of planning and state discipline. Effective measures are being adopted based on the results of the inspections.

[Question] How is the involvement of the above-norm and superfluous material valuables, which are being revealed in enterprises and organizations, in the economic turnover being economically stimulated?

[Answer] Additional reductions in the incentive funds in an amount equal to three percent of the gross income received from sales are being made from the sale of extra and unused material valuables in enterprises and organizations. The territorial bodies and their organizations transfer 50 percent of the obtained remunerations for services based on the sale of products to the union main supply administrations who are making a contribution to decreasing above-norm stocks.

[Question] How is the delivery plan being fulfilled considering the contract?

[Answer] The present developmental scales of the economy and the complicated economic ties require each enterprise and organization to strictly fulfill obligations for the delivery of products. As a result of the measures that have been adopted to implement the decisions of the December 1983 and February and April 1984 CPSU Central Committee Plenums and of the further strengthening of discipline and organization, the level of fulfilling product deliveries based on contracts has been raised.

At the same time, the failure to deliver based on contracts and requisitions still remains significant despite the general positive results. This pertains both to the enterprises of the industrial ministries and to the supply enterprises within the USSR Gossnab system. The practice of overfulfilling

volume indicators and issuing unordered products to the detriment of contract obligations is continuing; cases of departmentalism and localism are being tolerated; and funding discipline is being violated.

Many associations and supplier enterprises, which are located in the activity area of the gosnabs of the Georgian SSR, Azerbaijan SSR, Kazak SSR and the Northwest, Khabarovskiy, Leningradskiy and Bashkirskiy main territorial administrations are fulfilling their delivery obligations at a low level. Many organizations which are subordinate to the Krasnoyarskiy, Lower Volga, Northwest, Khabarovskiy, Kamchatskiy, and Komi main territorial administrations, are frustrating the plans.

Definite work to establish commodity stocks in the amounts and variety satisfying consumer demand is being done in the USSR Gossnab delivery enterprises in order to insure the continuous supply of material and technical resources to enterprises and organizations. These stocks are continuously growing and at the present time represent more than six billion rubles.

A favorable procedure for crediting stocks of products in USSR Gossnab enterprises and warehouses is now being established. However, a number of territorial bodies poorly shunt these stocks and manage them with insufficient effectiveness. In the majority of cases, the stocks of material valuables, which have been established at enterprises and warehouses, are incomplete. This has a negative effect on raising the fulfillment level of the plan for product deliveries to consumers both in range of products and variety in accordance with the concluded contracts and orders.

Stocks are excessively high for a number of types of products. Stocks of wire for reinforced concrete, of tin and of copper rolled products are considerably above the norm in Krasnoyarskiy Rayon; and in Leningradskiy Rayon--of high quality steel wire, spare nuts and screws, and items for parquet coverings. It is possible to continue these examples.

Cases of another type are being encountered where the assortment structure of stocks is not responsive to the tasks of supplying consumers. Stocks of iron and blast-furnace ferroalloys are lower than the prescribed norms in the Moscow City Rayon, of cast iron in the Belorussian SSR Gossnab, of roofing sheet steel in the Volgo-Vyatskiy and South Ural main territorial administrations.

The cases, which have been cited, are evidence that the management of supply and the rational use of material resources, union main supply administrations and territorial bodies are forming turnover commodity stocks in enterprises for the delivery of goods in an insufficiently effective manner. Unmarketable stocks, ones which have not been used for a long time and unnecessary stocks of commodity material valuables exist in a number of territorial bodies. Stocks of woolen yarn worth six million rubles have accumulated in warehouses in the Azersnabsbyt Association of the Azerbaijan SSR Gossnab. In the Poltava Oblast supply administration of the Ukrainian SSR Gossnab, above-norm stocks of cloth, "norka" collars, and clothing and lining fur, which have not moved for more than a year, represent more than three million rubles.

For the USSR Gossnab system in general, approximately 13 million rubles of extra material valuables, which are not being credited exist.

The USSR Gossnab bodies have intensified their work to apply the sanctions that have been provided by law for a violation of state planning and contract discipline. At the same time, cases of amnesty for violators have still not been eliminated. Several main territorial administrations in the Ukrainian SSR and Kazak SSR gossnabs are still not exercising the necessary exactingness on suppliers. At times, sanctions are being applied at lowered levels. The question of holding specific officials, who are guilty of frustrating deliveries, unfunded distribution of products and displays of departmentalism and localism, personally responsible is not being raised sufficiently urgently and in all cases.

The union republic gossnabs and the main territorial administrations must systematically conduct a topical and thorough analysis of the reasons for the failure to fulfill delivery obligations by individual associations and enterprises and must take together with the union main supply administrations, ministries and departments the necessary steps to eliminate the violations that have been revealed and to fulfill delivery failures.

[Questions] What is the value of the experience acquired by the Mosgormetallosnabsbyt Association which is concluding delivery contracts based on the origin of demand for products? Why has this experience not been disseminated within the USSR Gossnab system?

[Answer] The Mosgormetallosnabsbyt Association does not stipulate delivery periods when concluding product delivery contracts. Instead of delivery times, they indicate "at the request of the customer." Within the limits of the funds that are allotted to them, enterprises report on the metal products, which are required by them, as the need for them arises.

More than 4,000 customers have shifted to this form of supply. Delivery volumes based on arising needs represent more than 80 percent of the overall volume of warehouse metal supply.

The new form for organizing deliveries insures a considerable savings in metal products. This is basically accomplished by the incomplete extraction of allotted funds. The savings volume is growing annually. Whereas it was almost 15,000 tons in 1982, it was approximately 24,000 tons last year.

Different categories of enterprises have shifted to this form of warehouse supply regardless of the overall demand for metal products. The supplying of customers based on arising demands permits enterprises to be supplied with metal products more effectively even if their demand changes. In addition, above-norm stocks are lowered and the quality of warehouse deliveries is raised.

At the same time, a study of the experiences of Mosgormetallosnabsbyt revealed a number of shortcomings. An important one of them is the absence of a clear definition of supplier and customer rights and obligations.

At the present time, the USSR Gossnab is developing normative documents which will regulate the procedure for organizing product deliveries to customers based on arising need, submitting requests and their linkage with the contracts that have been concluded. The periods for the supply and market organizations to fulfill the requests and their responsibility for their violation are also being determined.

After the approval of the appropriate normative documents, the experience of the Mosgornetallosnabsbyt Association in delivering products in accordance with contracts concluded "based on customer request" can be recommended for use in other supply and market organizations within the USSR Gossnab system.

[Question] What is being planned to improve planning indicators in the future?

[Answer] The planning indicators that are in effect today, economic levers and incentives, the practices in applying them, and the organization of the workers' material and moral encouragement still do not completely contribute to the qualitative solution of the tasks that have been posed by the 26th CPSU Congress to the state logistics system. They still do not direct USSR Gossnab supply and market organizations toward the steady supply and effective use of material resources in the national economy.

Taking into account the specific nature of supply bodies and the need to shift the center of gravity to the market aspects of their activity, the indicator for the fulfillment of contract obligations for the delivery of products by the industry of the rayon being serviced to other economic rayons must be the main rating indicator for the work of the supply and market organizations in the USSR Gossnab system along with the indicator for the fulfillment of the plan for delivering products to the customer in nomenclature and assortment in compliance with the concluded contracts.

Such evaluation indicators as the achieved savings in material resources, a decrease in the combined stocks of material valuables in the rayon--including those with the customer, are also required among the main ones. With this in mind, it is necessary to develop a mechanism to economically stimulate supply and market organizations to achieve results in saving material and technical resources in the national economy.

The large-scale economic experiment, which is being conducted in the country, is placing on the territorial supply bodies increased responsibility for the fulfillment of planning tasks based on product sales volume, proceeding from the delivery obligations in nomenclature (assortment), quality and the periods prescribed by the concluded contracts (orders) and also for insuring the plan for deliveries to other economic rayons.

Under these conditions, the union republic gossnabs and the main territorial administrations are becoming the main link in the process of supplying customers with production and technical products because they are directly linked with the customers by economic contracts and mutual material responsibility.

In order to increase the material interest of supply workers on the spot in increasing the effectiveness of supplying the national economy with production and technical products, it is necessary to review the system of material incentives. The Basic Regulations on Costaccounting Relations between Union Main Supply Administrations and Territorial Logistics Bodies, which are now in effect, require a more exact definition.

The appropriate services in the USSR Gossnab are working at the present time on these and other problems in further perfecting planning indicators and the economic levers and incentives for logistics bodies.

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## REGIONAL DEVELOPMENT

### REGIONAL DEVELOPMENT BASED ON STANDARDIZATION DEBATED

Moscow STANDART I KACHESTVO in Russian No 2, Feb 85 pp 42-46

[Article by L. N. Al'perin, special correspondent, STANDART I KACHESTVO: "Experience and Problems in the Creation of Systems for the Management of Regional Socioeconomic Development on the Basis of Standardization"]

[Text] [Editors' note: The December 1984 issue of STANDART I KACHESTVO published an informative article on the All-Union Conference "On the Development and Introduction of Territorial Systems for Increasing the Effectiveness of Production and Improving the Quality of Work," which was organized by Gosstandart [USSR State Committee for Standards], VSNTO [All-Union Council of Scientific-Technical Societies] and the Rovno Oblast Committee of the Ukrainian Communist Party and held in Rovno on 10-11 October 1984.

That article discussed reports delivered at the plenary sitting by G. D. Kolmogorov, doctor of technical sciences; chairman, Gosstandart ("The Role of Standardization in Resolving the Problem of Effectiveness of Production and the Quality of Work"); I. I. Zagorul'ko, second secretary, Rovno Oblast Committee of the Ukrainian Communist Party ("The Work Experience of the Oblast Party Organization in the Development and Introduction of a Territorial System for Increasing the Effectiveness of Production and Improving the Quality of Work in Rovno Oblast"); Ye. V. Ovsyannikov, Chief, Machine Building Department, Moscow City CPSU Committee ("Basic Principles of the Moscow City Quality Control System"); Professor Yu. V. Tarbeyev, doctor of technical sciences; general director, "VNIIM [All-Union Scientific Research Institute of Metrology im. D. I. Mendeleyev" NPO [Science-Production Association] ("The Leningrad Territorial Quality Control System -- An Effective Factor in Increasing the Effectiveness of Production"); and B. A. Tret'yakov, chief, Latvian republic administration of Gosstandart ("The Experience of the Latvian SSR in Developing and Introducing the Republic System for Controlling the Quality of Products, Labor and the Effectiveness of Production.")

The following article is based on materials contained in reports and speeches devoted to the experience of developing systems for managing the socio-economic development of regions and problems of utilization of regional organizational-methodological standards in the process].

## Objective Necessity

A considerable number of the reports presented at the All-Union Conference "On the Development and Introduction of Territorial Systems for Increasing the Effectiveness of Production and Improving the Quality of Work" were devoted to the formation of systems for managing regional socioeconomic development.

Reports on this topic were presented by V. Ya. Belobragin, candidate of economic sciences; chief, State Inspection and Territorial Organs Administration, Gosstandart; Professor A. V. Glichev, doctor of economic sciences; director, VNIIS [All-Union Scientific Research Institute of Standardization]; A. P. Romanyuk, candidate of economic sciences; senior scientific associate, Institute of the Economics of Production, UkrSSR Academy of Sciences (Donetsk); A. D. Dobrobaba, chief, Industry Department, Krasnodar City CPSU Committee; N. P. Kalakh, chief of the industry and transport department of [an unspecified] Kishinev City party rayon committee; Yu. N. Demchenko, second secretary, Rovno City Party Committee; P. V. Yanus, chief, Belorussian SSR Administration, Gosstandart; G. V. Savchenko, director, Dnepropetrovsk TsSM [standardization and metrology center]; N. G. Kubyshkin, second secretary, Slavyansk City Party Committee; G. I. Shengera, secretary, Rovno City Party Committee; I. I. Chayka, candidate of economic sciences; department head, VNIIS; G. D. Suvorov, head, Industry Department, Tula Oblast Party Committee; V. A. Zavodyan, deputy chairman, Executive Committee, Rovno City Soviet of People's Deputies; chairman, [Rovno] City Planning Commission; V. M. Prikhod'ko, department head, UkrNIINTI [Ukrainian Scientific Research Institute of Scientific-Technical Information and Technico-Economic Research], UkrSSR Gosplan; V. M. Kondratenko, candidate of technical sciences; sector chief, VNIIS; M. I. Alekseyenko, Riga department chief, VNIIS; and N. M. Zhdanovich, senior scientific associate, Ukrainian Institute of Water Resource Engineers.

Practically all these reports noted that the development, introduction and improvement of integrated systems of management of regional socioeconomic development are an important direction in the activity of party, Soviet and economic organs of republics, krays, oblasts, rayons and cities in the practical implementation of the pronouncement contained in "Basic Directions of the Economic and Social Development of the USSR in 1981-85 and the Period up to 1990": "Carry out measures to eliminate departmental separateness, to secure the more complete combination of branch and territorial management. Improve the coordination of the activity of central, branch and local organs of management in the interest of resolving key problems in the development of the national economy." It was emphasized in particular that in our country the policy of securing the optimal level of interaction of branch and territorial management (with due regard to the particular features of each stage in the development of the productive forces and production relations) is a policy of consistent implementation of the Leninist principle of democratic centralism which combines the centralized resolution of national problems with the expansion of the rights of local organs and the development of the creativity and the initiative of the masses.

A number of reports analyzed the organizational, economic and legal aspects of functioning of the existing mechanism of interaction of branch and territorial management organs from these positions. Thus, A. P. Romanyuk's report noted that the governments of union republics and local Soviets of People's Deputies together with branch ministries are formulating plans for the location and development of the productive forces and are actively influencing the creation of local socioeconomic structures and the effectiveness and quality of the work of labor collectives. However, the character and share of participation of branch and territorial organs in the solution of the entire complex of problems and tasks in the management of regional socioeconomic development are substantially different.

The report showed that local party and Soviet organs -- unlike branch organs that manage subordinate enterprises, organizations and institutions directly -- can only influence regional economic objects indirectly by exerting an appropriate influence on the activity of labor collectives. Territorial organs yield substantially to branch organs in the share of the volume of work directed toward the realization of the majority of functions entailed in the management of the national economy (forecasting and planning, organization and stimulation, oversight, analysis, and regulation).

A. P. Romanyuk's analytical findings prompted him to conclude that with the existing mechanism of interaction between branch organs of management and territorial organs of government, the latter clearly lack the ability: (1) to mobilize local resources (including labor resources) to the maximum; to increase the effectiveness of production and improve the quality of performance of regional enterprises, organizations and institutions; and (2) to secure rates of regional social development that would correspond to the task of intensifying their economic development.

V. Ya. Belobragin, who analyzed the potential of territorial organs to influence enterprises, organizations and institutions of republic, union-republic and union subordination, also reached the same conclusion. He showed that territorial government is not sufficiently effective even in regions that are units of the nation's administrative and political structure and that typically have such mandatory conditions for successful government as: territorial integrity, relative economic autonomy and organs of territorial government. Territorial production complexes, which are an aggregate of interconnected economic objects of different branches of the national economy within an economic region, have still greater difficulty securing harmonious socioeconomic development, owing to the absence of the corresponding organs of government.

Many speakers cited specific examples drawn from their own republics, oblasts, rayons and cities to show that the weakness of territorial government is manifested first of all in the ever more perceptible lag of social development of regions behind their economic development and to demonstrate the fact that this lag is increasingly impeding the development of enterprises, organizations and institutions as well as the resolution of important problems relating to their effectiveness and the quality of their work.

V. A. Zavodyan analyzed the causes of this negative trend in his report and took special note of the fact that branch organs of management engaged in the construction of new enterprises or in the reconstruction and expansion of existing enterprises devote proper attention only to the development of their production infrastructure. They usually consider the development of the social infrastructure, on the other hand, a matter of secondary importance which is usually left to the enterprises themselves to resolve.

However practice shows that enterprises and organizations are primarily interested in using their funds for housing construction. But in order for labor collectives to function effectively, in addition to housing they also need stores, consumer service enterprises, transportation and communication facilities, polyclinics and hospitals, clubs and libraries, schools, kindergartens and day care nurseries, and much more.

The foregoing explains why practically all the speakers emphasized the point that the successful implementation of the demands formulated in the decree of the CPSU Central Committee, the Presidium of the USSR Supreme Soviet and the USSR Council of Ministers "On Further Raising the Role of Soviets of People's Deputies in Economic Construction" requires the prompt, radical resolution of a large complex of problems relating to the improvement of the territorial economic management mechanism along economic and organizational lines.

In their examination of the economic problems of improving territorial government/management, V. A. Zavodyan and other speakers stated that the most constructive way of resolving them is to generate real conditions for concentrating most of the corresponding funds of enterprises, organizations and institutions in the hands of the local Soviet of People's Deputies and to transfer to the latter all the necessary functions so that the development of a region's social infrastructure will be a pace of its economic development. Rovnoans believe that in order to create conditions such that the local Soviet would be able to "earn" the necessary resources, the size of payments of enterprises, organizations and institutions to the fund for the development of the region's social infrastructure should be determined on a normative basis depending on the end results of their work and the size of their work force.

In the examination of organizational problems, virtually all speakers particularly emphasized the objective need for the all-round development of work on the formation of territorial management systems and the regularity of the evolution of their goal orientation from quality control to the control of processes in regional socioeconomic development. In this regard, participants in the conference showed considerable interest in the practical realization of the potential of standardization in the resolution of problems pertaining to the organizational, methodological, normative and legal support of the development and functioning of these control systems.

#### Parameters of the System

Notwithstanding the considerable diversity of systems (described at the conference) for controlling regional socioeconomic development by virtue of the uniqueness of the regions themselves and creative initiative at the local level, a number of reports focused on such "parameters" as goal orientation,

structural and functional principles, objects and organs of control, basic subsystems, functions, tasks, etc., that inhere in all systems. This was done most completely in A. D. Dobrobaba's report "Basic Principles of the Krasnodar System for Controlling Urban Development."

As the speaker noted, a comprehensive system for controlling urban development was formulated in accordance with a May 12, 1983 decision of the city party committee and city executive committee of the Soviet of People's Deputies. In the development of this system under the scientific and methodological guidance of the Krasnodar affiliate of VNIIS, the experience of other parts of the country in development and introducing territorial control systems as well as Krasnodar's own experience in developing the KS PEP [comprehensive system for increasing the effectiveness of production] at Krasnodar enterprises were taken into account. Developers of the urban system proceeded from the premise that the city is a unified complex of interconnected enterprises, organizations and institutions, has many different relationships with its environment, and has its own patterns of development, i. e., that the city itself is a complex open dynamic system.

In his description of the system for controlling urban development, A. D. Dobrobaba stated that its principal objectives are to increase the effectiveness of social production, to raise the living standard of the urban population and to create conditions for the all-round development of the personality of each city dweller.

The system envisages the realization of the following basic tasks in order to attain these objectives:

- the optimal combination of branch and territorial interests in the formulation and implementation of integrated urban target programs and plans for integrated urban socioeconomic development;
- increasing the balance of branches in the urban economic complex through the development and broad utilization of forms and methods of territorial rationalization (raising the degree of utilization of natural resources and raw materials by urban enterprises; the improved use of urban territory; the higher degree of involvement of the able-bodied population in socially useful activity, etc.);
- securing the maximum correspondence between the urban production and social infrastructure and the needs of intensive development; increasing the effectiveness of production and improving the quality of work of urban enterprises, organizations and institutions;
- investigation and regulation of social and demographic processes;
- regulation of ecological processes (the improvement of the environment through better natural conservation; the higher degree of recycling of all types of wastes);

- institution of proper forms, methods and means for the territorial control of socioeconomic processes (the broad application of classification and standardization in the development of effectiveness criteria; in the organizational, methodological, normative and legal support of city government; and the use of balance, target program and mathematical economics methods);
- the further diffusion and improvement of KS PEP at/in urban enterprises, organizations and institutions;
- the generation of conditions enabling urban enterprises and organizations to fulfill all indicators of national economic plans; and
- the communist education of the working people.

The system's structure -- three levels of government/management (city, rayon, enterprise), nine branch, six target, and four support subsystems -- correspond to the system's goals and tasks.

Branch subsystems include subsystems for the management of industry, construction, transport, consumer services, housing and municipal services, trade and public catering, health care, education, and culture.

In each branch subsystem, control is exercised through special subsystems (for specific functions and tasks) for the control of: the fulfillment of production plans, work plans and service plans; the quality of products, work or services; the effectiveness of resource utilization; the organizational-technical level of enterprises, organizations and institutions; the social development of labor collectives and the urban population; environmental protection.

Every branch and special subsystem is intended to perform general and special functions and tasks; performance is evaluated on the basis of the appropriate indicators and norms.

Support subsystems are normative, methodological, informational, legal, and ideological subsystems that support the functioning of the system that controls urban development.

The appropriate city executive committee departments and the head and base organizations of branches of the urban economy direct the functioning, development and improvement of branch subsystems. The appropriate branch sections of the coordination council under the city party committee direct and coordinate all necessary work.

The report focused special attention on normative and methodological support of the construction and functioning of the system. This support includes the formulation, approval and introduction of principles, recommendations and urban standards. After all these documents are coordinated and tested at/in enterprises and organizations, they are examined by the coordination council under the city party committee and depending on their importance are approved

by a joint resolution of the bureau of the city party committee and the city executive committee or the city executive committee or the coordination council alone.

A. D. Dobrobaba stated that as of 1 September 1984 the following had been approved and were being introduced for the purpose of supporting the introduction and functioning of the system for controlling urban development: 4 basic system statutes; 20 statutes defining the tasks, rights and duties of subdivisions of the coordination council; 8 recommendations on methodological issues in controlling the effectiveness of the use of various types of resources within the urban framework. Recommendations were also made on the ranking of factors and on forecasting indicators of the effectiveness of production and the quality of performance of enterprises that envisage the use of mathematical economic methods and computers. Recommendations were made on the optimization of production programs, on analyzing the economic performance of enterprises, on the factor analysis of the effectiveness of utilization of productive fixed capital, material and labor resources; and on the analysis, certification and planning of the organizational and technical level of production.

In addition to the 32 aforementioned documents pertaining to the urban system, drafts have been prepared of 15 urban standards that regulate the tasks and indicators of comprehensive analysis of the level of development of each branch of the urban economic complex. A solution has been developed for the interaction of enterprises, organizations and institutions in this analysis and in the forecasting of directions of development of a branch for 10-20 years.

A. D. Dobrobaba stated that these standards have now been coordinated and tested, examined by the coordination council, and recommended for approval, but have not been approved because the status of urban standards, like all other regional standards with the exception of republic standards, is not defined by the state standardization system. This circumstance impedes the formation of the urban system and, what is most important, substantially reduces the effectiveness of its functioning. He noted that it is specifically the uncertainty concerning the legalization of urban standards by Gosstandart that was responsible for the generation of statutes and recommendations on questions which, as life shows, must be regulated with the aid of standards, the authority and effectiveness of which are determined by the entire might of the Gosstandart system which has at its disposal the appropriate institutions and territorial oversight organs.

In this regard, A. D. Dobrobaba and the majority of speakers assigned a high positive evaluation to the experience of the Rovnoans who, owing to the practical use (as an experiment) of oblast and city standards as the organizational, methodological, normative and legal basis of corresponding oblast and city systems for increasing the effectiveness of production and improving the quality of work, achieved a high degree of effectiveness in their functioning.

## Concerning the Potential of Standardization

Many reports by conference participants stated that the heightened interest shown in the methods and means of standardization by territorial organs with a certain amount of experience in the creation and utilization of integrated systems for controlling regional socioeconomic development is the natural result of the enormous potential of Soviet standardization as one of the effective means of planned, legal interaction of enterprises, organizations and institutions irrespective of their departmental subordination.

And indeed, as a result of almost 60 years of development, the organizational structure of the Gosstandart system, which embraces all levels of branch and territorial management of the national economy, is constructed with due regard to the need to secure the rational combination of these two aspects of management.

Thus Gosstandart's central apparatus and its scientific research institutes operate at an interbranch, state level. Functioning at the branch level are branch administrations and departments of Gosstandart's central apparatus that, together with the corresponding subdivisions of Gosstandart institutes, provide scientific and methodological guidance to the nation's head and base standardization organizations that presently number approximately 1600.

At the union republic level, standardization and metrological support activity is directed by Gosstandart republic administrations and standardization and metrology centers that interact closely with the gospans of union republics and with republic base standardization organizations which presently total more than 340. At the kray, oblast and rayon level, standardization and metrology centers and state laboratories for monitoring standards and means of measurement not only perform an oversight function, but also bear responsibility for the state of standardization and its regional development. In turn, Gosstandart's Administration of State Inspection and Territorial Organs directs the activity of all republic administrations, TsSM's and LGN's [state inspection laboratories].

At the enterprise and organization level, standardization departments (laboratories, offices) directly supervise standardization work.

The GSS [state standardization system] contains appropriate categories and types of standards for inter- and intrabranch, inter- and intraregional coordination of requirements for technical level and quality of products. Thus, state standards, the requirements of which are mandatory for all branches and regions, are developed and approved at the interbranch level. Branch standards and technical specifications for specific kinds and types of products are developed and approved at the branch level. Republic standards and technical specifications are developed and approved at the republic level. Technical specifications are developed and approved at the kray and oblast level for goods (made from local raw materials and secondary resources), the prices of which are approved by kray or oblast executive committees,

respectively. Enterprise standards and technical specifications (the latter in agreement with the customer for one-time orders) are developed and approved at the enterprise and association level.

Practice shows that the most rational combination of the branch and territorial management is achieved through the broad use of total standardization when the demands on the final product regulate the necessary parameters of not only all components used in its production but all elements of the production process as well. It is specifically because of this possibility that standardization today is increasingly used to provide normative and technical support for integrated scientific-technical and national economic target programs at the branch, interbranch and regional level.

#### On the Need for Regional Standards Based on Organizational Methods

The potential of standardization is substantially enhanced by the fact that in accordance with GOST [state standard] 1.0-68 ("The State System of Standardization. Basic Principles"), a standard may apply not only to material objects (products, references, physical prototypes, etc.), but to norms, rules, and specifications pertaining to objects of organizational methods as well.

With the growth of the scale of the national economy and the increasing complexity of its management, it has become obvious that the application of standards exclusively to products is no longer sufficient for the proper interaction of organizations and institutions even in the resolution of the problem of raising the technical level and quality of products. The policy of intensification, of increasing the effectiveness of production and of improving the quality of work has to an even greater degree necessitated standards based on organizational methods for the regulation of an ever broader spectrum of production relations.

Nevertheless,, a number of reports contended that within the present framework of the GSS, standardization based on organizational methods had substantially less potential than standards based on technical norms for realizing the practical combination of branch and territorial principles in the management of the national economy.

The principal reason for this situation is that standards based on organizational methods in the four indicated categories of the GSS can only increase the effectiveness of interbranch and branch management. This is the specific task addressed by state organizational-methods standards in the System for Developing and Putting Products into Production, the Unified System of Technological Preparations for Production, unified design and technology documentation, the State Products Testing System, etc., as well as by branch organizational-methods standards and enterprise standards that have become the basis for branch quality control systems and all types of integrated systems for increasing the effectiveness of production and improving the quality of work at enterprises, in associations, and in research and design organizations.

As regards territorial management, at the present time only republic standards can be used as organizational-methods standards to increase its effectiveness. It is this very circumstance that substantially impedes the resolution of the problem of organizational-methods and normative-legal support for the construction and functioning of integrated systems for managing the socioeconomic development of regions belonging to union republics: krays, oblasts, rayons, and cities.

V. Ya. Belobragin noted that the urgency of the problem of regulating the construction and functioning of regional systems of management stems first and foremost from the fact that the diffusion of these systems has acquired a mass character (130 such systems have been put into operation and another 300 are being developed). He said that the still insufficient degree of effectiveness of their functioning is the principal reason for the formulation of the problem.

I. I. Chayka redefined the problem in more specific terms after analyzing organizational-methods support for different territorial systems and concluded that the documents -- statutes, instructions, recommendations, etc. (sometimes in extremely large numbers) -- comprising this support are extremely varied in structure, form and content and do not by any means always ensure the fulfillment of all conditions for the rational construction and effective functioning of systems, i. e., in their aggregate, organizational-methods support documents do not comprise a systems-forming complex. This situation stems from the fact that developers of territorial systems (1) are not properly guided by existing recommendations on the construction of control systems; and (2) do not make sufficient use of standardization methods, i. e., do not fulfill rules and demands on the organization and technology of developing and using organizational-methods documents.

A. V. Glichev emphasized in particular the point that even a system-forming complex of organizational-methods documents guaranteeing the rational construction of a territorial system is unable to ensure its effective functioning if the principles, rules and demands contained in these documents are not mandatory.

He also said that the problem of regulating the construction and functioning of territorial systems of management has two closely interconnected aspects: an organizational-technological aspect and a normative-legal aspect. The former is associated with the application of standardization methods; the latter -- with appropriate means of standardization, i. e., regional standards -- kray, oblast, rayon, and city.

Thus the conference essentially discussed the feasibility and possibility of legislating the organization and technology of creating (developing, coordinating, approving, introducing, and monitoring the observance, revision and renovation) of a system-forming complex of documents that is mandatory for all regions and that possesses certain properties ensuring the rational construction of a territorial system on the one hand and of legislating the mandatory fulfillment of all demands of the system's documents by all those to whom the system applies thereby ensuring its effective functioning. And since the State Standardization System [GSS] alone can make the application of

standardization methods and the application of norms, rules and requirements prescribed by means of the system mandatory, the question of incorporating regional organizational-methods standards in the GSS must be decided by Gosstandart and its institutions.

As specially noted in the reports, this formulation of the problem became legitimate owing to the passage of the Law on Soviets of People's Deputies which calls for raising their role in economic construction. The reports emphasized that the considerable expansion of the legislative and executive functions of the local Soviets is responsible for the possibility of their playing a substantially larger role in territorial systems for managing the socioeconomic development of regions and is also the basis of the feasibility of their use of regional standards as the normative-legal basis of these systems, thereby ensuring their rational construction and effective functioning.

Describing the preliminary results of the experiment conducted in Rovno Oblast and Rovno City, A. V. Glichev said that they as yet confirm only the necessity and fundamental possibility of using standards in the organizational-methods support of territorial systems of management. The only thing that is clear today is that this experiment must be continued. It is essential to identify and study the entire complex of difficult, contradictory problems of regional standardization; to thoroughly check and refine ways and means of their optimal resolution.

At the same time, a number of reports specially emphasized that the experiment in Rovno Oblast and Rovno City does not mean that work in all other regions of the nation on the formation, development and improvement of management systems can be continued only upon the successful completion of the experiment. This work must be continued in all possible directions, because only then will it be possible in a short period of time to identify and resolve a broad spectrum of complex problems relating to raising the effectiveness of territorial management and to improving its interaction with the branch management of the national economy.

I. I. Isayev, chairman, Gosstandart, delivered the concluding address at the second plenary sitting of the All-Union Conference "On the Development and Introduction of Territorial Systems for Increasing the Effectiveness of Production and Improving the Quality of Work." In his summation, he said in particular that the reports, the enthusiastic discussion of the reports, and the optimism of the great majority of the participants are vivid evidence that territorial management systems are not a contrived phenomenon introduced from the outside, but are the natural result of creative activism at the local level in the resolution of important problems pertaining to the further improvement of the economic mechanism and magnifying its impact on increasing the effectiveness of production and improving the quality of work. The conference convincingly showed that ways have already been found and means have been improved for resolving a large complex of difficult problems pertaining to increasing the effectiveness of territorial systems for controlling the quality of products and for managing regional socioeconomic development.

After emphasizing the objective need for the general diffusion of territorial systems and their further development and improvement, I. I. Isayev called upon conference participants to carry out this very necessary and important work more actively and persistently.

**FOOTNOTE**

1. See: "The Experience of Creating Territorial Systems for Increasing the Effectiveness of Production and Improving the Quality of Work," STANDARTY I KACHESTVO, No 12, 1984, p. 3.

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**INTRODUCTION OF NEW TECHNOLOGY****TECHNICAL ADVANCE--KEY FACTOR IN INTENSIFICATION DRIVE**

Moscow PLANOVYE KHOZYAYSTVO in Russian No 4, Apr 85 pp 26-33

[Article by Professor V. Loginov, doctor of economic sciences; department head, Institute of Economics, USSR Academy of Sciences: "Scientific-Technical Progress--The Principal Link in the Intensification of the Economy"]

[Text] The Soviet economy is on the threshold of an important stage in its development, a stage in which the effectiveness of the national economy must be dramatically enhanced on the basis of intensification.

K. U. Chernenko's article "To the Level of the Demands of Developed Socialism" substantiates the premise that intensification is immanent in the present stage of developed socialism and reflects the qualitative state of the economy and that quantitative criteria and indicators do not therefore fully characterize their essence. The article advanced the target of raising the country to the highest level of labor productivity in the world and pointed the way to attaining this goal with due regard to the advantages of our socioeconomic system and our cumulative science-production potential.

Higher labor productivity depends in large measure on the level of utilization of scientific-technical progress in the economy and in the social sphere. But in the last 7-9 years, it has become more difficult to supply production with manpower and consequently to utilize production capacities, to supply the national economy with raw materials, fuel and energy due to the mounting need for them and the fact that the majority of energy carriers are now located in the remote, relatively undeveloped regions of Siberia and the North.

The improvement of the population's well-being underscores the problem of satisfying its effective demand for durable, stylish, quality goods. However, wage increases in a number of branches in recent years have outstripped labor productivity thereby making it difficult to eliminate the disparity between supply and demand. Despite the difficulty a number of branches and regions are having supplying production with manpower, the bulk of capital investments still goes to new construction, i. e., to create additional jobs, instead of being used for the reconstruction and modernization of existing production. This also increases the national economy's requirement for raw materials, fuel and energy. Thus, the share of capital investments in new construction in the overall volume of investments between 1980 and 1983 rose from 35.8 to 36.3

percent at the same time that there was a corresponding reduction in the share of investments in the reconstruction and technical retooling of enterprises.

Another consideration is the waning influence of those factors of extensive development that previously had a positive impact on the national economy (the involvement of new land and cheap natural resources in economic circulation) at the same time that the management mechanism, planning mechanism and the entire economic mechanism have not yet been restructured for work under the new conditions of the ever greater relative scarcity of these resources. But this is only one of the reasons underlying the conversion of the economy to the intensive path of development. The other, more important reason is that the internal content and qualitative state of our economy have reached a level of maturity that have made them an objective condition to the intensification process.

The character of large-scale production based on sophisticated technology and a system of economic interrelations of branches and production facilities, in which a shortfall in the required production volume in one link inevitably sets off a "chain reaction" of disruptions in other links, require further improvement in its technical base and change in management techniques, i. e., the transition to intensive-type reproduction based on the acceleration of scientific-technical progress and the maximum use of its results.

Scientific-technical progress is the continuous development of physical elements of the physical elements of society's productive forces that is accompanied by the accumulation of knowledge, by the improvement of the system of production management, by the improvement of the production potential, and is expressed in the increased effectiveness of the economy. Consequently, scientific-technical progress is a most important means of intensification and effectiveness of the economy even though results can outweigh expenditures even if the technological base of production remains stable, for example, due to the mobilization of internal production reserves (the conservation of raw materials as a result of the optimal observance of the production routine, the reduction of equipment idle time, etc.).

However, according to K. Marx, the distinguishing feature of intensive reproduction is not the "expansion of the field of production" but is rather the application of "more effective means of production," i. e., scientific-technical progress embodied in implements and objects of labor in combination with the use of more highly skilled labor in production. Such development of production, based on the utilization of advances of scientific-technical progress, is accompanied by the conservation of material resources, i. e., leads to the more effective functioning of the entire economy.

The acceleration of scientific-technical progress is associated both with the development of the productive forces and with the improvement of production relations that must stimulate the development of the physical elements of production. In the words of K. Marx, "together with the revolution that once took place in the productive forces, which is a technological revolution, there is also a revolution in production relations."<sup>1</sup> This premise is important for orienting the economic mechanism toward the acceleration of

scientific-technical progress throughout the nation because most economists believe that scientific-technical progress is only one of the manifestations of the development of the productive forces, but has no bearing whatsoever on production relations.

At the same time, it is the teaching of Marxist political economy that the development of the productive forces, in which scientific-technical progress acquires ever greater significance, is closely related to improvements in production relations; the latter may hinder or accelerate the development of the productive forces. Since technical progress encompasses the production sphere, its participants in ever increasing measure are entering into relations with one another for the purpose of utilizing advances of scientific-technical progress. Hence it is legitimate to conclude that the acceleration of scientific-technical progress and the upgrading of its role in the intensification of the economy are conditional upon the improvement of the production relations of developed socialism. What is more, the deceleration of the economic growth rate since the second half of the seventies is explained not only by the declining influence exerted on the economy by favorable extensive factors (cheap raw materials, constant influx of new manpower, etc.) but also by the fact that production relations, in particular, the economic mechanism, do not fully correspond to the new conditions of production and to the level of development of the productive forces. This is manifested in the absence of adequate stimuli for manufacturers to assimilate new products, in the limited selection available to equipment buyers, in the reluctance of one and the other to take risks in the area of technical development, in shortcomings in the pricing of new equipment, and in deficiencies in amortization policy, which are the cause of the slow rate of modernization of the production equipment park, etc.

The development of productive forces of predominantly intensive reproduction is oriented toward qualitative change in the structure of physical factors of production under the influence of scientific-technical progress (in particular, [the influence] on increasing the share of means of labor developed on a fundamentally new technological basis in the national economy; the concentration of state-of-the-art equipment in high-tech branches; the increase in the share of the active part of productive fixed capital in its aggregate technological structure in all branches, especially in industry; and the reduction of expenditures of raw materials, supplies, energy, and fuel per unit of final output).

Since future scientific-technical progress will be determined in the broad application of labor- and resource-saving technology, there will be substantial changes in the structure of socially necessary expenditures. In particular, the share of expenditures of live labor will be dramatically reduced, the expenditure of raw materials, fuel and energy in embodied labor inputs will diminish and the share of amortization will be increased as a result of the higher value of productive fixed capital and the acceleration of the rate of its modernization. In industry, for example, the share of raw materials and basic supplies in the structure of production costs (in existing prices) declined from 64.6 to 63.6 percent; auxiliary materials--from 4.6 to 4.4; wages and social insurance withholdings--from 16.1 to 14.3 percent; the share of amortization rose from 5.1 to 7.9 percent. Only in respect to fuel

and energy is this progressive trend not seen due to the rise in the cost of sources of fuel and energy carriers. The share of these elements with respect to fuel rose from 3.8 to 4.1 percent and in the case of energy increased from 2.6 to 2.8 percent. The latter is linked to the need for the earliest possible introduction and dissemination of fuel- and energy-saving technology in the national economy, i. e., to the transition to the energy-saving type of reproduction.

At the present time, the expansion of the sphere of application of production processes based on the ever increasing utilization of advances of science and progressive technology--the development of so-called science-intensive production--is the basic pattern in the qualitative transformation of the productive forces. This confirms K. Marx's well-known premise that "with the development of large-scale industry, the creation of real wealth becomes less dependent on working time and on the quantity of labor expended than on the power of the agents that are set in motion during working time and that in turn are not in any manner of correspondence with the actual working time required for their production, but rather depend on the general level of science and on the progress of technology or on the application of this science to production."

The expansion of the sphere of application of science-intensive production will promote the mass introduction of automation with the broad use of electronics and computers; the application of adaptive systems making it possible to reduce the optimal size of enterprises and to change the product mix in a short period of time; and the introduction of microprocessors, the principles of microelectronics and the most important directions of its development: robotics, machining centers and program-controlled equipment. As regards the objects of labor, the utilization of scientific advances in production must be directed toward the development and practical application of biotechnology, genetic and cellular engineering, and the development and use of new types of superstrength polymers capable of replacing metal as a structural material. It is also essential to introduce polymers with ferment-like behavior that radically alter the technology of production in branches that use costly and scarce products and raw materials, particularly those that are of mineral origin. The use of these fundamentally new materials and biotechnological processes will lead to the intensification of the scientific and technological revolution in agriculture, construction and other branches of industry.

From the standpoint of structural changes, scientific-technical progress, as a factor in the qualitative transformation of the productive forces, must be expressed in the further increase in the share of machine building and the chemical industry, i. e., the basic branches that produce new types of implements and objects of labor; in the change in the correlation between the extractive and manufacturing branches in favor of the latter; in the increase in the share of the manufacturing industry's finishing subbranches and production facilities producing the final product in every branch.

As shown by the trend toward the development of science and technology and all production, scientific-technical progress is the basic link in the

intensification of the economy and the principal means of bringing about the qualitative transformation of the productive forces. But its acceleration with the aim of exerting a substantial influence on the intensification of the economy and making the economy more effective depends not only on the solution of scientific-technical, but organizational, economic and personnel problems as well. In other words, the economic mechanism and the entire system of management must be appropriately reoriented toward the earliest possible utilization of advances of science and technology in production. All these measures of an economic, organizational and legal character are a component part of the process of improving the forms of production relations in the period of transition to the intensive type of reproduction.

Thus, intensification is the integrated process of qualitative improvement of the productive forces and production relations that is expressed in the renovation of the production apparatus on the basis of highly productive equipment and fundamentally new technology and that is accompanied by the restructuring of the entire system of management and planning.

The reorientation of the economy toward the new type of reproduction entails overcoming the inertia not only of economic processes but, as noted at the 26th CPSU Congress, of economic thinking as well, and requires the development of a more creative approach to labor and the conservation of material resources.

The national economic management system that formed during the period of predominantly extensive development, including the system of plans, accountability and performance evaluation, was oriented toward the quantitative growth of production. It formed at a time when production was to a large extent supplied with all types of resources. Therefore it cannot be instantaneously converted to an economical mode or restructured without the substantial adjustment of all planning and evaluation indicators that regulate the expenditure of production resources. However this does not diminish the role of expanding the scale of production. In many branches, this problem continues to be the principal obstacle to attaining balance in the economy by bringing its lagging links up to the mark, by resolving the most important national economic problems, including the satisfaction of the population's needs for goods and services, the technical retooling of branches, the chemicalization and electrification of the national economy, etc.

The task of satisfying social and personal needs as a result of product quality, reliability, convenience, economy, esthetics, and other properties becomes an important task. Most branches that are suppliers of raw materials, fuel and supplies have already attained such a scale of production that an expansion of the scale would entail a sharp increase in expenditures in the raw materials base, in geological prospecting, transport, etc. Under these conditions, it is essential to introduce resource-saving technology, substitutes, the use of secondary resources, i. e., to form certain directions of scientific-technical progress.

However the planning system and the existing economic mechanism do not fully promote the utilization of advances of scientific-technical progress in the

national economy (in particular, such forms as the technical retooling and renovation of production; the mechanization of labor in auxiliary and ancillary work; the raising of the technical level; the improvement of product quality; and the introduction of fundamentally new technologies, resource-conserving processes and economical types of equipment that require large expenditures and long assimilation time).

Historically, as more attention has been focused on scientific-technical progress, we have established special sections in plans to reflect the development of science and technology. They have incorporated plan indicators characterizing scientific-technical progress; a system of incentives encouraging production collectives to introduce new types of equipment and technology, etc. The result has been the formation of two systems operating in parallel. One of them is concerned with the planning and stimulation of the quantitative growth of production and the other is concerned with the acceleration of scientific-technical progress even though the latter system is the most effective means of increasing production and of conserving resources. And even now, enterprises in branches that have been converted to the conditions of the economic experiment bear greater responsibility and are offered more incentives for the fulfillment of the plan for production volume than for the introduction of new equipment and technology.

Therefore, in order to accelerate scientific-technical progress, it is necessary to create conditions under which the fulfillment of the plan and economic development in general would be impossible without the introduction of new equipment and technology. To this end it is necessary first of all to restructure planning so that plans for production and technical development would not exist in isolation, but would be parts of the unified national economic plan, in which a section of the new technology plan would articulate basic targets relating to volume and mix. Even at enterprises, these sections of the plan are compiled and approved by different subdivisions (the first section by the planning department; the second by the engineering department) at different times. As a result, when the production plan is approved, the technical development plan occasionally does not receive the necessary material and financial support.

In order that technical retooling and the introduction of new equipment and technology would be continuously operative factors in increasing the volume and effectiveness of production, the plan must make provision for the appropriate resources. It is also advisable to orient the system of technical norming of resources and working time toward the latest technological advances, without the use of which it is impossible to fulfill the plan's principal targets. The system for stimulating production activity and the introduction and assimilation of new technology will then be a unified system for stimulating the most effective attainment of specific results in production.

Scientific-technical development creates a reserve for the future. Therefore plans for scientific-technical progress are in their nature perspective plans that require a long planning horizon. They must be the basis for other planning work. In order to fulfill this demand, the Comprehensive Program of

Scientific-Technical Progress, which was compiled for a 20-year period, must be made a more highly substantiated document. At the present time, the document has more scientific-informational than practical planning significance and merely summarizes (lists) the directions of scientific-technical progress. The economic substantiation of the program should be strengthened and the most effective long-term directions of science and technology should be selected. The basic directions of the country's socioeconomic development for 10 years in the future would then be more closely coordinated with long-range plans for the development of science and technology both with respect to the time frame and the resources required for their fulfillment. We should accordingly make the control of scientific-technical progress a leading link in the general economic management chain and establish integrated scientific-technical progress sections for all levels of management (national economy, branch, association, enterprise) that should include all links of science-production cycles (research, development, production and deployment of new equipment) and should supply these sections with material, financial and labor resources. Scientific-technical progress plans should articulate the final national economic and cost accounting results: the growth of national income, resource conservation, ecological or other social results, etc., that will be realized as a result of scientific-technical measures and the scientific-technical progress program on the whole. This in turn requires the more careful consideration of the actual effect of new equipment and technology at all levels of management.

The transition from the planning of random technical measures to the planning of technological complexes and systems of machines, to the transformation of comprehensive scientific-technical programs into leading components of economic plans encompassing the creation and realization of scientific-technical advances up to and including the final results of application of new technology in the consumption sphere is an obligatory condition to the acceleration of scientific-technical progress and to raising its role in the intensification of the economy.

In order to strengthen the planning principle in the development of new equipment, it is necessary to accelerate the realization of the demands of the decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures to Accelerate Scientific-Technical Progress in the National Economy," especially the part that states that the fulfillment of plans and targets for the development of science and technology is included among the key indicators that are used to evaluate the performance of production associations (enterprises) and to sum up the results of the socialist competition. However, in order that truly new equipment and not merely modernized old equipment is put into production, it is essential to take inventory of all scientific research efforts in branch scientific research institutes and design offices and to retain only those directions of the work and development effort that correspond to world standards. In our view, this would require altering the system of product certification and assigning to the highest quality category only those technical innovations that correspond to world standards and to increase the size of the reward accordingly.

In the process of designing and developing new equipment, it will be necessary to strengthen economic criteria. Equipment is developed for the economy, for the satisfaction of a specific need, and the socioeconomic result (effect) should be the criterion of its newness. At the same time, technical councils frequently evaluate innovations solely on the basis of the degree of technological newness without consulting economic data characterizing their usefulness to the national economy.

There is a need to improve patenting and licensing work that must become the important source of technical innovations in production. First of all, there must be closer scientific-technical cooperation with CEMA member nations since each of them has amassed a certain amount of experience and has created a backlog in specific directions of scientific-technical progress. It is important not to duplicate these efforts, but to use them in the interests of the entire socialist community. More complete use must be made of the possibility of unifying the efforts of branches and enterprises in different socialist countries in the creation of systems of machines and individual types of equipment. The experience of VAZ in making up sets of equipment should be extended more broadly to technical programs.

There is also a need to examine another problem that, while not directly related to scientific-technical progress, impedes its development to a considerable degree. The reference is to unsubstantiated price increases on new equipment when the dynamics of prices outstrips the growth of the equipment's useful effect. The higher cost of the assimilation of new products in machine building was the objective reason for this. Therefore, this cost is frequently included in the price of a future product together with the necessary profitability norm and this price is not reviewed for a long time even though the cost declines during series production.

It would seem that the higher prices paid by customers for equipment would ultimately promote the development of machine building. However there are also substantial shortcomings in his area. The higher prices that customers must pay for every new model make them mistrustful. Managers justifiably believe that it is better to repair an old machine than to buy a new one that costs two or three times more but that has the same productivity as the old model. Is this not one of the reasons for the lowering of the coefficient of retirement of old equipment? Machine builders, however, have the opportunity to make only certain changes in the basic design and for many years produce practically one and the same kind of equipment. Therefore many branches use the same equipment based on old technology for many years.

The feasibility of combining economic incentives for the basic results of production and for the development, introduction and assimilation of new equipment in the future was examined above. Unfortunately this combination has not taken place.

We must develop planning norms governing expenditures for the development and introduction of various types of new equipment, special financing and incentive norms differentiated according to the technical level and national economic effectiveness of new equipment that is manufactured and introduced.

We should also establish a procedure for encouraging the reduction of lead time. Since new equipment and technology are the basis for the qualitative transformation of all production, top priority should be given stimulating and rewarding collectives for their development and introduction.

Thus the development of a unified planning and economic incentive system encompassing all spheres of economic activity is a most important factor in the acceleration of scientific-technical progress. Nonetheless, scientific-technical progress must become its basic link that determines the other results.

Of late, there have been many proposals to expand the rights and independence of enterprises in the technical reequipment of production. Indeed, the improvement of planning must be combined with the expansion of the rights of enterprises and their independence in selecting variants of technical development, in making specific decisions on the modernization and reconstruction of production, on the purchase and replacement of the necessary equipment, etc. Today, even enterprises that have been converted to the economic experiment do not have much opportunity to resolve these questions; enterprises have been given more rights to deal with other economic activity than to engage in activity relating to scientific-technical progress.

Economic mechanism improvement measures aimed at expanding the rights and independence of enterprises call for the utilization of reserves for accelerating scientific-technical progress. However the significance of this measure should also not be exaggerated since the expansion of the rights and initiative of enterprises in the technical reequipment of production will for the most part influence the increase in the scale of introduction of already assimilated and series-produced equipment. The development of fundamentally new technologies and expensive equipment and their introduction at enterprises are possible only when they are financed by state capital investments.

The choice of priorities in technical policy and the establishment of sequence in the modernization and reconstruction of branches and enterprises, the purchase of patents, licenses and equipment abroad, the distribution of equipment among enterprises, and other aspects of scientific-technical strategy relate entirely to state functions and are subject to centralized management. Consequently, the acceleration of the nation's scientific-technical development requires the optimal combination of the expansion of the independence of enterprises and the centralized functions of the state.

And finally, the integration of measures in this area is the main condition to the acceleration of scientific-technical progress. The improvement of planning, norms and the coordination of scientific research work, the system of prices must be put in order and the economic mechanism must be improved simultaneously, otherwise the effectiveness of isolated measures in some one branch will be slight.

**FOOTNOTES**

1. K. Marks and F. Engel's, "Sochineniya" [Works], Vol 47, p 461.

2. Ibid., Vol 46, Part II, p 213.

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